Issue 325
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ISSUE 325

ORCHESTRAL SWARM

BEAUTIFUL LONG SONIC TEXTURES CREATED
FROM LAYERS OF MICRO-MOMENTS

RECORDED AT BRITISH GROVE

SPITFIRE AUDIO

Digital dreams

In electronic music circles, people have a bit of a tendency to fetishise anything analogue. Whenever a company unveils a new synth, drum machine or effects box, top of the internet comments will always be the question, 'Is it analogue?', the implication being that if not, it's not worth bothering with.

But this obsession with all things analogue risks us overlooking the fact that many of the coolest, most iconic synths and instruments of all time are actually digital classics. It's these we're celebrating in this issue's cover feature – from FM classics like Yamaha's DX range to the house defining Korg M1, taking in a few crunchy 16-bit samplers along the way for good measure. We'll show you how to capture the classic sounds of these digital icons, and look at some ways to bring retro digital classics into the 21st century. We hope you enjoy the issue!

Si Truss, Editor
simon.truss@futurenet.com

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Ableton unleash Live 10

The Berlin developers have lifted the lid on an eagerly awaited DAW update, bringing us new synths, effects and some neat new workflow tricks

After a few small leaks and rumours set the internet alight toward the end of last month, Ableton have now officially unveiled the latest incarnation of their much-loved DAW, Live. Version 10 brings a subtle new look, along with a handful of new devices and some potentially very interesting changes to the workflow and under-the-hood design.

Of the new devices, the big-hitter is Wavetable, a new synth built with wavetable oscillators that can be loaded with an assortment of sounds recorded from analogue synths, real-world instruments and a few more esoteric sources. Wavetable pairs its oscillators with two analogue-modelled filters and an assortment of modulation tools, including two LFOs and three ADSR envelopes.

On the effects front, Live 10 gains a new delay named Echo, which is designed to run the sonic gamut between vintage hardware and more modern digital delays. Built-in reverb, modulation tools and multiple stereo modes help craft complex, moving soundscapes. There's also a trio of new stompbox-inspired effects housed in Pedal, which feature circuit-level replications of classic overdrive, fuzz and distortion boxes. Live 10 also adds Drum Buss, a device that combines analogue-style compression, transient control, low-end enhancement and more.

Aside from the devices themselves, Live 10 features plenty of general tool and workflow tweaks too. Possibly most intriguing is Capture, a new undo-like tool that lets users recall on-the-fly MIDI performances and turn them into clips complete with groove and velocity. Elsewhere, multiple MIDI clips can now be edited at once, groups can exist within other groups, and audio inputs can be named.

The Arranger View gets a handful on new functions for version 10, including nudging, in-arrangement timestretching and drag-and-drop track duplication. On the mixer front, there are subtle tweaks to a few devices, such as extended low end EQ slopes for EQ Eight, and a new Bass Mono mode for Utility.

The visual update is fairly subtle, mostly limited to a slight change in font and overall cleaner, sharper design. The browser gets a refresh too, adding a new Collections system that allows users to create folders of their favourite or most used tools and colour code them.

To the Max

After it was announced earlier this year that Ableton had acquired Max developer Cycling '74, it was fairly inevitable that the next version of Live would see a tighter bond between the two applications. Predictably then, Live 10 Suite now boast full integration with Max, which Ableton claim will lead to faster load times, less CPU drain and more stability when using Max-powered tools. It also brings new MIDI and audio integration options, including the ability for Max devices to send and receive SysEx and output audio to multi channel speaker setups.

There are a few things absent from the announcement, which we were hoping we might see in the new Live. Most notably, given that Ableton have spent much of 2017 developing and heavily promoting their app-friendly sync technology Link, we half expected Live 10 to be accompanied by some kind of iOS companion. In this respect, Live still lags behind Logic, with its compatible Remote interface, and Cubase, which has a mobile counterpart in Cubasis.

As ever, Live 10 will come in several tiered versions, ranging from the entry-level Live Intro up to the full Live Suite. You'll need to pick up Suite if you want all the new devices along with access to Max for Live. Live Standard users will also get Drum Buss though.

Live 10 is set to arrive within the first quarter of 2018, preceded by a public beta period. Download versions start at £69 for Live Intro, rising to £319 for Live Standard and £539 for the full version of Live Suite. Boxed versions are available too, at slightly higher prices. Existing users are advised to log into their Ableton accounts to check on upgrade prices.

Ableton are also running a discount offer from now until Live 10's launch, whereby all versions of Live 9 are available at a 20% reduction and include a free upgrade to version 10 on launch. FM

At a Push

While the new version of Live isn't accompanied by a hardware update for the official controller Push, users do get some new features. Most notable is a new step sequencer mode that splits Push's 64-pad grid in two, allowing it to be used for step sequencing and live playing at the same time. Push will also now display notes in a clip directly on the hardware for easier navigation.

Naturally, there are new interfaces for each of Live 10's new devices too, as well as updated interfaces for EQ Eight and Live's Compressor.

Pioneer DJ bring Toraiz sampling to the DJ booth

Pioneer DJ have introduced a new DJ-friendly sampler in the form of the DJS-1000. Said to be built for "improvising unique sounds and phrases," it's designed to be taken into the booth and used to add creativity to your performance.

Housed in a chassis the same size and shape as one of the company's CDJs, the DJS-1000 combines many of the features and interface elements of the Toraiz SP-16 sampler with an interface and format that will feel instantly more familiar to DJs.

FM got some quality hands-on time at this year's ADE, and were instantly impressed by the intuitive workflow. The interface is based around a grid of 16 bright, multicoloured performance pads, a touch strip and a seven-inch full-colour touchscreen. Like with the SP-16, this pad grid can be used for triggering one-shots, firing off loops and slicing samples. A button grid along the front of the interface allows for XOX-style step sequencing too.

Performance features include a live sampling option. You can record from the inputs – a stereo pair of jack ins – and use these sounds as individual tracks, automatically synced with the current sequence.

Given that the DJS-1000 is designed to be used as part of a wider setup, its syncing functions will come in useful. There's MIDI clock, and Beat Sync enables you to synchronise a performance by beat/bar via Pioneer's Pro DJ Link. Combined with the live sampling functionality, this opens up potential to sample direct from other CDJs.

Within a few minutes of getting our hands on the DJS-1000, we'd thrown a beat together with very little guidance, thanks to the well-laid-out interface. There are effects onboard too, for DJ-style manipulation, although the DJS-1000 doesn't keep the SP-16's Dave Smith-sourced analogue filter.

Projects and samples can be stored on a USB device, and there's support for project files created on the Toraiz SP-16. Pioneer DJ are clearly hoping to get the sampler installed into DJ booths, which in turn should encourage DJs and producers to buy into the Toriaz ecosystem. Whether this will happen remains to be seen, but the DJS-1000 certainly opens up some great, easy-to-use options for creativity in the DJ booth, which can only be a good thing.

The DJS-1000 is out now, priced at 1299 euros.

On the ground at ADE…

As ever, the annual Amsterdam Dance Event week brought plenty of opportunities to talk production and check out new gear. Alongside an impressive selection of workshops from the likes of Ellen Allien, Surgeon, DVS1 and more, ADE's Sound Lab provided plenty of gear to get hands-on with. Once again, Eurorack gear had a major presence on the show floor, along with plenty of gear that bridges the gap between DJing, live performance and studio work. While the DJS-1000 was the new gear highlight this year, there was plenty of exciting hardware to get hands-on with. We took the opportunity to jam with Roland's latest Boutiques, and were tentatively impressed by their new recreations of the classic SH-101, TR-808 and D-50 (stay tuned for full reviews next issue!)

GarageBand gets a new library, drum machine and more

Apple's entry-level DAW has received a free update, hitting version 2.3 on iOS and bringing some interesting new features. First and foremost is a new drum instrument, Beat Sequencer. This user-friendly instrument is stocked with 808 and 909-style sounds, paired with a simple drum machine-like sequencer. The Drummer tool gets some new sounds too, courtesy of several new drummers bringing more acoustic kits and additional percussionists, including one specialising in foot stomps and hand claps.

There's a new sound browser too, which could potentially be great for those who find GarageBand's inbuilt sound library too cumbersome. The new library allows users to browse and search sound packs in the cloud, then download just the ones that appeal most. As a result, the base app is much more storage-friendly, but can easily be expanded with plenty of synths, drum loops, bass sounds, instrument lines and much more.

There are further tweaks throughout the app too, including a selection of new Asian-inspired touch instruments and sounds.
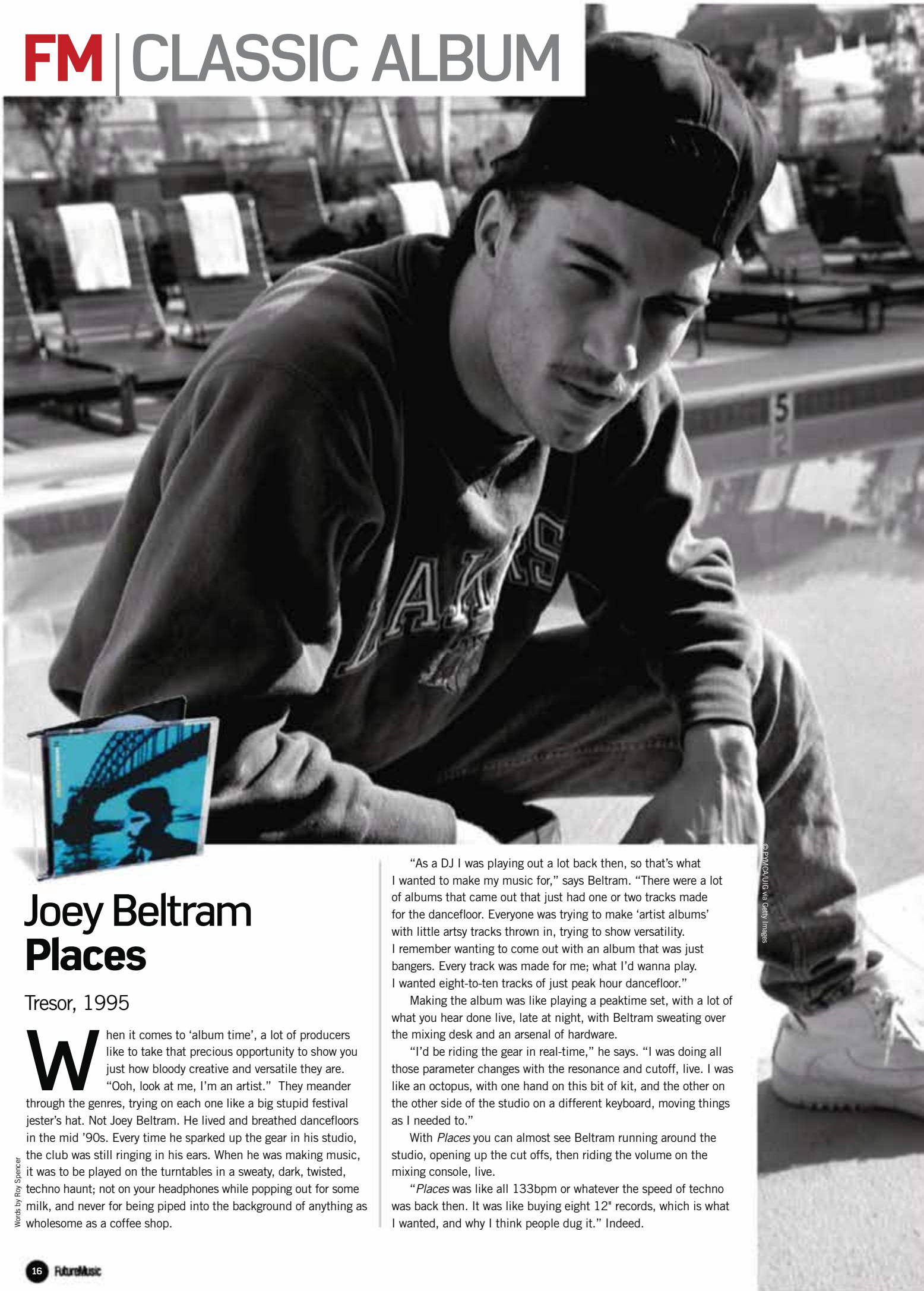
Joey Beltram
Places

Tresor, 1995

Words by Roy Spencer

W hen it comes to 'album time', a lot of producers like to take that precious opportunity to show you just how bloody creative and versatile they are. "Ooh, look at me, I'm an artist." They meander through the genres, trying on each one like a big stupid festival jester's hat. Not Joey Beltram. He lived and breathed dancefloors in the mid '90s. Every time he sparked up the gear in his studio, the club was still ringing in his ears. When he was making music, it was to be played on the turntables in a sweaty, dark, twisted, techno haunt; not on your headphones while popping out for some milk, and never for being piped into the background of anything as wholesome as a coffee shop.

"As a DJ I was playing out a lot back then, so that's what I wanted to make my music for," says Beltram. "There were a lot of albums that came out that just had one or two tracks made for the dancefloor. Everyone was trying to make 'artist albums' with little artsy tracks thrown in, trying to show versatility. I remember wanting to come out with an album that was just bangers. Every track was made for me; what I'd wanna play. I wanted eight-to-ten tracks of just peak hour dancefloor."

Making the album was like playing a peaktime set, with a lot of what you hear done live, late at night, with Beltram sweating over the mixing desk and an arsenal of hardware.

"I'd be riding the gear in real-time," he says. "I was doing all those parameter changes with the resonance and cutoff, live. I was like an octopus, with one hand on this bit of kit, and the other on the other side of the studio on a different keyboard, moving things as I needed to."

With *Places* you can almost see Beltram running around the studio, opening up the cut offs, then riding the volume on the mixing console, live.

"*Places* was like all 133bpm or whatever the speed of techno was back then. It was like buying eight 12" records, which is what I wanted, and why I think people dug it." Indeed.

Track by track with Joey Beltram

Instant

"The first two tracks were the last two tracks to get done. And *Instant* was the last. When I'd got to that point I was like, 'Yeah. I'm done'. I put it first because it sounded right in the sequence.

"Because it was the last track on the album, I went through all the heaviest stuff to get there. I'd say this was the lightest song on the record. By the time I'd got up to this point in the recording, I felt I could do something a bit lighter. I don't wanna say 'housey', but in 1994 that was a bit housier, although it doesn't sound like that now [laughs]."

GameForm

"This was like my tip of the hat to the Cajual label, and the stuff that was coming out on Relief Records. I was playing a lot of their stuff out. It was a new label at the time. It subliminally influenced me, their style and rhythms. The basslines all sounded like they seamlessly blended with the drum tracks. All the musical parts sounded like percussion. I wanted to do something like that and add my own little twist. Yeah, this was me applying my sound and style to a little bit of their flavour – that's what *GameForm* was.

"I don't play this album out anymore. I've kinda moved on from that sound. But if I did, *GameForm* would be the one for me that stands the test of time. It's a special track."

TenFour

"This was the first track I did for this album. If I'm not mistaken, this went on the *Tresor 3* compilation. They needed a track around the time I agreed to do an album for them. They were like, 'We're doing this comp, you got anything now? It can be your introduction on the label. You can let everybody know that you've joined, then follow it with an album.' I don't think I had anything ready, so I went to work and started the album so I'd have a track ready for them for this

Joey Beltram is back in the studio with force right now. Fans have recently bugged out to his latest remixes for Agent Orange, another New Yorker, on Bitten, which is a label to watch right now. He's also putting the finishing touches to his next album, which will be ready for the end of the year. He does warn that it will show some more versatility, and (shock, horror) not just be full of bangers. Watch this space!

"I noticed a lot of people after this album made their albums in this design. I dunno if it was because of me or I just noticed it more, but I saw a lot more albums of this type of music that were just eight or so tracks of just bangers. Instead of having one slow song, or every track having different tempos. Yeah, after that I saw a lot of producers making albums like that. It was cool. I got to travel with a lighter record box. I could have a bunch of albums packed with tracks that got the job done."

compilation. That got me started. It was like, 'One down!' [laughs]."

5.7Litre

"I'd just bought a Corvette at the time, and this was the engine size. I was driving it around a lot, and it was loud and made a lot of noise. I had other cars at the time; it was like a hobby. Before that I was collecting studio gear. Now I'd moved onto cars.

"If you'd met me at that time you would have probably been very bored with me. Cars became my big interest. I would go to car shows and stuff. I was young. I was in my early 20s. *5.7Litre* was a term that was written on the side of my car, so I had to use it.

"Plus, I was testing all these tracks on the car's stereo as well. That's how you'd check your mix. It was a little trick back then. If it sounded good on cassette in the car, you were onto something [laughs]. You'd run from the studio with a tape and hit the car and see what it

sounded like, levels-wise. Then you'd head back to the studio to make adjustments based on that.

"Nobody does that anymore. You'd have to put it on your phone and Bluetooth it [laughs]."

Metro

"This, and the next track, *Floaters*, were both graffiti references. Oh, and *SetUps*, too. Where I grew up I lived right off Metropolitan Avenue, and that was my main train station. When I was a kid I'd ride the train. I was a graffiti writer; it was right near the train yard. That's where I started writing, at the M Yard. That's the same yard from the movies *Beat Street* and *Style Wars*.

"This is a perfect DJ record. I made it, like the rest, to play out at the time. These were the types of tracks I was looking for, as a consumer. As a DJ I was in the record shops, spending hours with a stack of wax and some headphones. You'd start with about a hundred records, and maybe end up with five.

I was looking for something. There was something I wanted that I wasn't hearing that much. Something that would electrify the dancefloor. That was something I was going for with *Metro* – that missing piece. I didn't know what I was looking for until I sat down and made it.

"What did I want? I wanted a hard beat, so I made the beat heavy. Then I wanted the hi-hats really bright and crispy, so I ran them through this little keyboard that I used a lot on Places, the Roland SH-09.

"The music wasn't just hard; it had to have attitude. I wanted to make techno tracks that had a rhythm and soul, as well as a lot of swagger."

Floaters

"I knew this was going to be the core of the album. Most of the songs, except *GameFour* and *Instant*, were aggressive. *Floaters* was the meat of the album. It was aggressive, meaty.

I started off doing these first.

"I gave it the graffiti name, too. A floater refers to a piece on the side of a train that goes between the windows and the doors at face level. If you caught that spot it was called 'catching the floater spot'. Some writers would just catch floaters. That was their whole gimmick."

SetUps

"This is a graffiti name, too, but I digress. Production-wise, this has a growly bassline. I think I used the Prophet-600 or the Sequential Circuits Pro One… I think it was the Pro One – I used it a lot on the album. It gave it that squelchy bass. I used to come up with so many bottom-end starting points with that. You'd come up with the beat and just throw the Pro One on there. You'd have so many things that would just sound good immediately. It was good combination; it was a machine that inspired you straight away. You could just throw anything on top of it and be happy.

"I had all the Sequential Circuits gear. Even their little keyboard synths from the '80s. They were my 'go-to' guys. Later on I had the same thing with E-mu. Back then you had preset templates that would come in a little book that you'd fill in. If you

wanted a preset you'd have to get a marker and write what knob went where, and where you would put the levels. That's how you'd save your presets.

"If you bought the machine second-hand that book was already done [laughs]. You'd take a blank page and photocopy it to get your own little stack."

"I wanted to make techno tracks that had a rhythm and soul, as well as a lot of swagger"

Oval

"All the little changes you hear on this were done live and in the moment. I used to reel-to-reel edit, but at this point I wanted to get it all in one shot. So, if the track was five minutes and I messed up three minutes in, I'd start again. I'd stop, rewind the tape, and go back in. Every take had a spontaneous element to it. I think you can hear that.

"There's some bongo sounds on here, too. That was just something I made on the Yamaha DX100. I'm actually sequencing it through one of my analogue sequencers, but I only had it on two. You could run it as a loop on 16 steps, but I had the notes looping on two steps. Then I had those two steps playing different velocity tones over 16 steps. It gave it a good rhythm.

"Just running those keyboards through analogue synths let you come up with weird stuff your brain wouldn't normally think of. Then if you put the pitch on different steps you would stumble on happy little accidents. This was one of them. When I heard it I was like, 'Ah, that's cool. I'm gonna leave it right there'."

Nameless

"This was a bonus track. I knew it wouldn't be on the vinyl so it was just me messing around with an 808. I knew it was just gonna be a bonus track and not on the vinyl, just a hidden 'CD-only' track. It's almost the entire 808 running through the SH-09 and it's me playing with the filters and envelopes to gave it a bit of a different velocity.

"The levels of the inputs would trigger the envelopes on the filter. Back then you'd run a real 808. Program it in the 808 and then press play. It was almost like playing a little game. Remember those little handheld football games where there was a little blip on the screen? I would get that same enjoyment with an 808 on my lap, with the headphones on, just making beats.

"It's not like you're making a drum beat on the MPC. You had pads that you banged with that… doing percussive things with your hands. With the 808 you're flicking little lights on and of and pushing the button. There are 16 steps, you just push them on or off. That was just fun. I'd do it for hours [laughs].

In the studio with Joey Beltram

"*Places* was made at On-One Studios, which was my spot in the OC in New York. Kit-wise, at that point, it was like I was buying stuff daily. There was very little computer stuff. All my sequencing was done in the MPC3000, which had just come out. I loved that – I had it on backorder before it even came out. Everything was made on pieces of gear, MIDI-ed together, and there was a lot of stuff live going on in the studio. A big part of the sound of that album was the Yamaha DX100. Which, after putting it next to all the gear that I'd collected in the studio, looked like a little toy. I had some Prophet synths. I bought a lot of Dave Smith gear. I would deal directly with him. Then I had the Roland 808, and SH-09, which was great for making bright hi-hats. At the time I used to use the Casio FZ1 keyboard a lot, too – it had filters and you could really take a sample and add LFO and the resonance and all that."

WANT TO KNOW MORE?

For the latest Joey Beltram tunes and mixtapes head to soundcloud.com/joey-beltram

LIKE IT? TRY THESE...

Various
Tresor 3
The timeless compilation album that welcomed Beltram into the Tresor techno family back in 1995.
ADD THESE TO YOUR PLAYLIST:
Joey Beltram – *Ten Four*, Robert Hood – *The Rhythm Of Vision*, Jeff Mills – *Solid Sleep*

Joey Beltram
Aonox
Wanna hear vintage Beltram do straight up downtempo? Check his second LP from 1994, which has recently been reissued on Ownlife.
ADD THESE TO YOUR PLAYLIST:
'South Pacific, Land Of Oceans, The Cold'

Joey Beltram
Live Mix
Cracking live set from 1997 with our boy dropping gem after gem, including his most celebrated banger, 'Energy Flash'.
ADD THESE TO YOUR PLAYLIST:
Joey Beltram – *Energy Flash*, L.A. Williams – *All Aboard*, DJ Funk – *Pump It*

Carl Craig
Landcruising
Elsewhere in 1995 this tough-as-nuts album was also in heavy rotation. A good year for banging techno, then.
ADD THESE TO YOUR PLAYLIST:
Technology, Science Fiction, Mind Of A Machine

Various
Sirius – A Tresor Compilation
The next album to drop on Tresor after Places was this epic techno selection. A label truly on top of its game.
ADD THESE TO YOUR PLAYLIST:
Jeff Mills – *Wrath Of The Punisher*, Joey Beltram – *M-Yard*, Robert Hood – *Parade*

Amp Fiddler
Amp Dog Knights

Mahogani Music

Following on from a break from music since 2006, Amp Dog Knights is the second album in two years from Detroit funk veteran Amp Fiddler. Joseph 'Amp' Fiddler is a man steeped in Detroit music culture. Not only did he play with legendary funk outfits Parliament/Funkadelic and Enchantment, but he also taught J Dilla how to work his MPC and wrote and recorded with both Prince and Seal. He brings that funk authenticity and virtuosity to his fourth studio album. Out on his fellow Detroit native Moodymann's Mahogani Music, Amp Dog Knights is a highly expressive and engaging record that traverses glittering, fly soul and funk with genuine style and attitude. Awash in laidback grooves, lush hip-hop atmospheres, shimmering '70s funk, glittering electronic disco and P-Funk rock jams, the album is as diverse and expansive as it is polished. Deft productions inject warmth, soul and intimacy into every single track, creating a velvety, luscious soundscape to sink into like warm water. Featuring collabroartions with J Dilla, Moodymann, T3 and Ideeyah, the LP strides various styles which still keeping its Motor City identity at its heart. The music of Amp's homeland spills over with a typically laidback but passionate vibe. Clever beats, flowing bass and subtle melodies and flashes of synths add the kind of fly style that Amp Fiddler alone can bring to a record in our times. A wildly inventive and utterly distinctive producer, Amp Fiddler delivers yet another reminder of why his undeniable appeal continues to last so long. *Tom Jones*

ADD THESE TO YOUR PLAYLIST:

Return of the Ghetto Fly, I'm Feeling You, Free your Soul

9/10

Anja Schneider
SoMe
Sous Music

Berlin techno mainstay Anja Schneider ushers in a new and exciting era with her impressive new album. Her first solo record for 9 years, *SoMe* is the first release on her newly formed Sous Music imprint after deciding to bring her much-loved label Mobilee to a close after twelve years. Hitting the reset button appears to have energised Schneider, allowing her the freedom to push out in order to sweep back in with a fresh and exciting new outlook. That freedom has enabled the dynamic producer to drift through an expansive collection of styles ranging from Detroit techno to raga, breaks, drum and bass and back to Chicago house, with flourishes of jazz thrown in for good measure. The sheer ground covered makes this Schneider's most expressive album yet, but it is also her most personal, allowing us into the melting pot of her myriad influences and inspirations. Full of energy, hypnotic grooves and lush melodies, this record is bristling with the kind of enthusiasm and positivity that always fuelled the creative fires of one of Berlin's most admired DJ, producer and label owners. *Tom Jones*

ADD THESE TO YOUR PLAYLIST:
The Sun, Night Out, Look of Love

8/10

James Holden & The Animal Spirits
The Animal Spirits
Border Community

UK electronic pioneer James Holden returns with his third album recorded with his newly expanded band The Animal Spirits. His most ambitious and expansive record yet, *The Animal Spirits* hones in on an inimitable synth-led folk-trance, hypnotic, psychedelic-infused sound that feels wildly unpredictable yet immersive throughout. Embracing the liberation from computer to band, Holden orchestrates the creativity of an outfit who trust their instinct and intuition, making for an improvisational, live feel. This injects the record with a raw aesthetic, bristling with energy and spirit, and it launches us off into a transformative, hallucinatory journey of the mind. The soundscape meanders through spiritual jazz, kraut rock, glitchy electronics, shimmering synths, brass, wind, live percussion and warm melodies with a natural and easy flow. Merging such disparate styles with such cohesion and fluidity is testament to Holden's innovative and forward-thinking ideals. This is a mesmerising record that distinctly announces one of the UK's best-loved outsider artists' transformation from DJ into experimental bandleader. *Tom Jones*

ADD THESE TO YOUR PLAYLIST:
Spinning Dance, The Beginning & End of the World, Thunder Moon Gathering

8/10

KiNK
Playground
Running Back

Three years on from his last LP, machine-funk-loving Bulgarian producer KiNK is back with another wild and eclectic album. This time for Gerd Janson's highly acclaimed Running Back imprint, *Playground* is a restless assault of electronic music that is full of colour, life and attitude. Shimmering synths, succulent bass, bustling drums, bright melodies and intoxicating grooves flood the record in KiNK, real name Strahil Velchev's, idiosyncratic and inimitable style. Upbeat and energetic, the record is awash with densely layered soundscapes and addictive atmospheres. Such is his dexterity that he is able to switch between warm, classic-tinged disco to cold, dub techno explorations and onto almost formless, experimental and avant-garde etchings with comfortable ease. With such flexibility and creativeness, *Playground* delights with every twist and turn as KiNK takes us on a an unrestrained and untamed journey that careers down several roads. His ability to allow each track to grow, evolve and morph into something bigger and ambitious casts the whole album an air of unpredictability akin to a house party in full swing. With his love of electronic music spilling out from the record's every pore, it is no wonder KiNK is such a well-loved and admired proponent of club culture. With *Playground*, he reminds once again why he's such a permanent feature on that scene. *Tom Jones*

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RETRO DIGITAL

Let's forget analogue for a minute and delve into some of the pioneering gear and musical approaches taken as the digital revolution swept the planet

VIDEO ON FILESILO

The 1980s were a truly remarkable decade for music technology. Digital sampling, new approaches to sound synthesis, the industry-wide adoption of MIDI as a control protocol, the workstation concept, multi-timbrality… the list of groundbreaking developments is impressive. But there are horror stories from the period, too, with clumsy interface design and a questionable drive towards 'realistic' sounds high on the lists of the era's biggest mistakes.

This month, we're going back in time to the pioneering sounds of the DX7, the D-50 and the M1. We're also allowing ourselves to cross the divide into the 1990s, to look at some of the sampling techniques popular with pioneering drum & bass producers. We'll look at how hardware effects units didn't feature the shimmering high sample rates and resolutions of those we use today, and how these limitations produced some classic (and easy to emulate) sounds. But we'll also place some of the key technology in context, to understand how such extraordinary musical developments unfolded in such a short time-frame. So grab the hair gel and rip your jeans at the knees. It's time to go retro digital.

Golden era or embarrassing decade?

Since the days in which the first commercially available synthesizers were released for sale, through to the present day, it's clear that there are many people in the world fascinated

by the concept of making new sounds from oscillators, filters and amplifiers. Look around at the musicians working with synths today, and you'll find that those technologies have diversified considerably. For some, Eurorack and modular systems are the most important and 'pure' form of what electronic music production can be. For others, synthesizer sounds built into rugged keyboards for touring and live performance matter most. And, of course, there are millions of producers around the world whose fascination with what synthesizers can do is exclusively allied to the software they use, with no synthesizer hardware in their studios at all.

If we were writing a potted history of synth design, it would be relatively straightforward to summarise the 1970s as the golden age of analogue synthesis, with increasingly capable technologies offering richer, thicker, more expansive sounds. But classifying the characteristics of synthesisers from the 1980s would be much harder, partly because the instruments available at the beginning of that decade differed in capability so wildly from those ten years later.

A huge part of this is due to most synthesizer manufacturers from that period becoming increasingly motivated by the notion of 'realism'. When Moog, Buchla and the other 1960s synth pioneers brought synthesis into the mainstream, it's hard to imagine that they would have considered making realistic string, piano and brass sounds a high priority, but in the '80s, this became an obsession for Roland, Korg and

Yamaha. Digital sampling, the solution that came to the fore as the method for getting 'realistic' sounds, was prohibitively expensive and technologically under-developed to be a 'sole' source of sound generation at that time. Today's enormous orchestral sample libraries, upon which media composers are now reliant, would have been nigh-on impossible to achieve back then.

And yet some sampling technology did exist, and integrating this limited tech with synthesis became a popular approach throughout the 1980s. So, as an example, the idea of gluing a one-shot 'blow' onto a sustained synthesizer tone to make a combined sound which might be stored as a preset called 'flute' seems laughably naïve when

compared to the round-robin, multi-sampled sounds underpinning so many of today's productions.

With the benefit of hindsight, it's easy to see this as an unnecessary and foolish mission, as we all know that what happened over the next ten years: year on year, digital sampling became more capable and more cost-effective, and storage went from being measured in megabytes to being measured in terabytes.

And yet you only have to register the number of contemporary artists heavily influenced by the sounds of the 1980s to recognise that instruments from that era have made an indelible impression on music ever since. Through these pages, we're going to experiment with their approaches to see how they can impact upon your own work.

The synth pop pioneers

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As with all musical genres, understanding the seminal pop and dance records of the 1980s requires an understanding of the background to which those records formed the soundtrack. Most of the pioneers of '80s pop cite the arrival of Kraftwerk as the most significant influence on

the music they went on to make. Kraftwerk had a look and a sound that set fire to the imaginations of kids who'd felt cut adrift by a rock scene. Acts like OMD (Orchestral Manoeuvres in the Dark), The Human League, Depeche Mode and Gary Numan all took direct influence from the sound

of Kraftwerk, but they were also inspired by the political and socio-economic situation of the early '80s. As many of the synth pioneers will point out, despite punk's self-proclaimed anti-establishment ideals, it was much braver to paint your nails, wear makeup and play synthesisers in the late 1970s than it was to cause a riot at a punk gig. A brittle confidence arose, triggering a movement that continues to this day.

But just as importantly, what the synth pioneers did, just as the studio engineers of the previous two decades

> ## "It was much braver to paint your nails, wear makeup and play synthesizers"

had done before them, was to push the boundaries of technology, wringing new sounds from gear pushed to its limits. Depeche Mode, for instance, started life as a four-piece band where each player (except Dave Gahan, the singer), played a monosynth live, whilst one

member began each new track by setting the tempo on a drum machine to keep everyone in time. Founding member Vince Clarke makes no secret, though, that once sequencers became viable ways to produce backing tracks, the self-confessed control freak in him decided to quit as he no longer needed bandmates. Suddenly, technology could fulfil their roles.

Similarly, the earliest digital samplers also prompted a host of musicians to think in more grandiose ways. Depeche Mode (with Martin Gore having replaced Vince Clarke as the main songwriter) now used E-mu's Emulator to sample metallic and industrial sounds on 1983's *Construction Time Again*, to rail against an increasingly corporate world, whereas the lusher, more symphonic sound of the Pet Shop Boys' *West End Girls* used exactly the same sampler to program the backing track of a lavish record which mixed pop writing with American dance music. New Order were also inspired by the clubs of New York around the same time – whilst the iconic *Blue Monday* was initially written to form an alternative to the traditional encore at the end of their live shows, it became popular enough to become the best-selling 12" single of all time.

Of course, these are just some of the many examples of pop bands using technology creatively through this period; the intoxicating blend of a new generation of artists inspired by the financial and political landscape of the time and a seemingly endless series of technological developments. These kept new synths, samplers, sequencers and effects units flooding the market every year with ever more sophisticated ways of producing new sounds, maintaining an unstoppable momentum. If the sounds of this era are of interest to you, BBC4's *Synth Britannia* (**bit.ly/SynBrit**) is well worth watching, as it features interviews with many of the artists of this period discussing their work and musical approaches. Their brave decision to adopt technology as their musical obsession is still paying dividends many years later.

Noisy reverb tails

Hardware reverbs of the '80s usually offered lower sample rates than we're used to today, providing crunchier, grittier decay phases

If you could wander back in time and find yourself in a well-appointed studio of the late 1980s or early 1990s, as well as the swathes of synths and the all-important mixing desk, you'd find hardware effects modules of reverbs and delays, ready to be accessed from the desk's auxiliaries. Hardware reverbs such as Lexicon's PCM range were popular, but so were Alesis' more affordable units, including the flagship Quadraverb. These digital reverbs' lower-than-pristine sample rates ensured a slight grittiness, with characteristic aliasing, particularly when decay tails came towards their conclusions or when working at low levels. Some producers became so frustrated by the ends of reverb tails that they turned to gates to kill their volumes off altogether, creating an even more distinctive effect…

> We've selected a detuned lead sound from NI's FM8, to provide a DX7 like 'siren synth' to our mix. To this, we add Valhalla's VintageVerb on Auxiliary 1. This provides a slightly pitch-modulated reverb decay, but despite its retro nature, it still sounds quite clean.

> After the reverb insert, we add a bitcrusher. We set this to 12-bit resolution, with 2x downsampling. This colours the sound nicely, adding some digital aliasing to the audio picture. This is particularly noticeable when the signal decays to near silence at the end.

> We add the rest of our backing track, featuring a similarly FM-style pad sound, an early '80s 'industrial' style percussion sequence and a eighth-note bassline. We send the pad to the same reverb, so that it also picks up some of the digital crunchiness as it decays.

Building a classic '80s pad

Here's how to build that staple of the '80s pop and dance music hit, the synth pad. Any subtractive synth will let you design a similar sound

> We're starting with a 'scratch patch' in Logic's ES2 synthesiser, one that bears little resemblance to the warmth and richness of an '80s pad. We have a single sawtooth wave oscillator with a wide-open filter. We do program a chord progression which feels harmonically 'of the era'.

> We start by shaping the filter, keeping the 24dB low-pass shape but dropping the cutoff point dramatically, so the tone becomes smoother. We set an envelope to control the filter, with a 280ms attack time, a long decay (2.5 seconds) and a 50% sustain level.

> Next, we shape the amp envelope. This gains a longer attack (300ms), full sustain level and a release time of 730ms. This softens the beginnings and ends of each note. We tweak the filter envelope, dropping the envelope-to-filter-cutoff amount a little more.

> We introduce a second oscillator. This features the same waveform as Oscillator 1 but we set a balance between the two oscillators using the blend 'triangle'. If your chosen synth features level dials for each oscillator instead, use these. We detune the oscillators +/-12 cents.

> We add a third oscillator, this time using a square wave with variable pulse width. We audition a few 'positions' for pulse width before settling on a position which suits the other oscillators. We also detune this oscillator by 6 cents before setting a blend between all three waveforms.

> Alongside our pad, we program Kick, Snare, Hat and Clap parts, as well as bringing in a classic '80s synth bass sound and pattern. Effects-wise, we add two reverbs from UAD's AMS RMX16 and Valhalla's VintageVerb, plus some sheen from the Maag EQ4.

Synth design horrors

The '80s, in particular, was a seminal decade for synthesizer design, with digital approaches to synthesis offering a wealth of sonic opportunities that simply weren't feasible during the 'analogue-only' years. But there's no denying that, for all of the positives, there's an elephant lurking in the room and for all the producers and programmers who worked with synths during that period.

Have a look at the photograph of the Korg Wavestation below. Looks pretty slick, doesn't it? All that black matte plastic and the super-large LCD display… a minimal design classic, you might argue. But in truth, it's a triumph of form over function. Yes, the Korg Wavestation was capable of remarkable sounds but, as you should be able to see from its rotary encoder, five 'soft' keys, whose functions corresponded to endlessly changing menus on that display, and a collection of numeric buttons, meant that programming it was so much harder than it needed to be. Paper manuals hundreds of pages long would explain how, in order to adjust a filter envelope, you needed to enter an Edit mode (which would vary in function depending on whether you were working with 'Multi' or 'Single' patches), before clicking a different button to select the filter, another to select its envelope and then several more to access the appropriate parameter to adjust.

For those masochistic enough to try seting up an LFO, it's fair to say that the return to slider and dial-laden synthesizers is a 'survival of the fittest' moment of celebration; synthesizers are simply not designed to be programmed through multiple menus. As such, whilst it was slightly derided at the time of its release, Roland's enormous JD-800 was an important instrument; ushering in an example of the 'second coming' of tactile synthesizer interfaces.

Korg's Wavestation is just one example of a synth whose capabilities required stamina and determination to actually program

Working with '80s synth techniques

In the 1980s, the battle between synth manufacturers revolved around a number of key technologies. Aside from the quality of the onboard sounds, the number of notes a synth could produce simultaneously was a big deal. You'd see instruments badged as '64-voice polyphonic', which would give you some indication of how many notes an instrument could play at once – if using a sequencer, you could easily demand multiple voices on multiple MIDI channels. Another way multiple voices could be triggered at once was when your synth switched from 'Single' to 'Multi' mode. The Korg M1 is an example of such capability, using key splits to offer a number of patches across the keyboard at once. Whereas the bottom two octaves might trigger a bass sound, the upper section might offer a lead synth, offering a richer, lusher contribution than a single sound when playing live. Equally, you might have a range of sounds trigger across the keyboard with a pad sound giving way to a couple of slowly evolving soundscapes. Modern performers might be at peace triggering clips from Ableton Live on-stage, or having a number of pre-recorded tracks playing beneath the single part they're playing on top, but experimenting with keysplits and layers, to be played simultaneously, gives a different kind of workflow which can really open the creative floodgates.

Roland's sample and synthesis sounds

Roland D-series synths combined ROM-based samples with a digital synth engine to offer new realms of sonic possibility

In the late 1980s, as 'realism' became an increasingly important part of what synth manufacturers were trying to achieve, companies adopted different approaches to produce the most lifelike sounds. Roland's recognised that the most difficult-to-synthesize element of a sound was its attack portion, so through its D-series synthesizers (with the flagship D-50 at the top of the tree), it offered a hybrid approach, offering a series of short attack samples stored in ROM, to which you could add a 'synthesized' decay, sustain and release waveform. This approach became so popular that it remained Roland's predominant technology all the way through the JV and XV synth module ranges of the 1990s. Here's how you can work with a similar 'Sample And Synthesis' approach in your DAW.
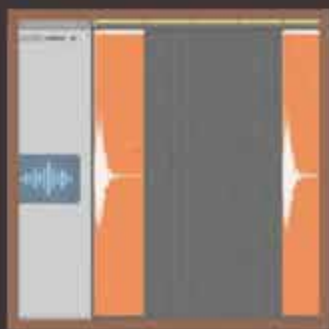
> We plug a microphone in and record a number of one-shot sounds, eventually selecting a short 'ha' breath sound. On the D-series synths, one-shot samples like this were stored in ROM, ready to be combined with digitally generated 'synth' layers for composite sounds.

> We program a backing track consisting of programmed bass and pad sounds, with an Apple Loop providing the beats. On top, we seek out an appropriately '80s top line in Alchemy. At the moment, the two layers are a Vocal and a Flute. Oscillators 3 and 4 aren't being used.

> We add our sampled 'ha' sound as the third sound layer in the Alchemy patch. We automate the volume of this so that the first time round, the mix is as it was originally. Second time around, we hear more articulation in the lead sound as the 'ha' provides extra attack.

> These days, our computers can play hundreds of tracks at once. But '80s sequencers and synths couldn't. Their 'limitations' are often their strengths – keep things simple.

> One of the most endearing things about limited sampling technology are dodgy loop points and single samples being stretched over more keys than is entirely 'musical'. Let a few samples go a long way.

> Research specific pieces of gear. It's not hard to find out which synths were used on classic '80s albums before digging into their feature sets to discover how they actually worked.

> Don't be afraid to work at lower sample rates, or to use bitcrushers on every channel. This doesn't have to mean super-low 8-bit sample rates – work at 16-bit or 12-bit, and things will immediately sound more 'of that era'.

Creating Reversed Reverbs
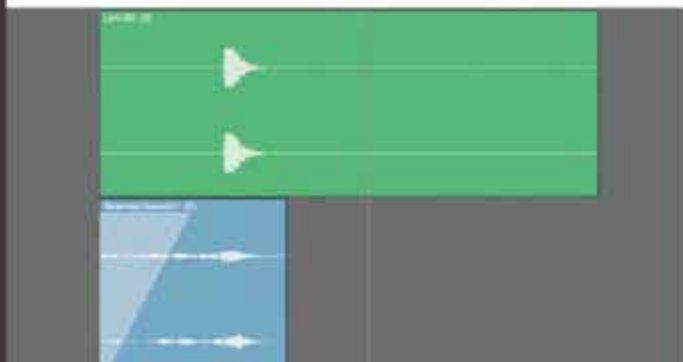
Here's a reversed reverb leading into a snare sound. A staple '80s treatment.

One of the most popular features of sampling has always been the capacity to reverse sounds which, in computing terms, is simple enough [a computer just has to reverse the order of the samples representing the audio] that 'Reverse' is an edit feature common to almost all samplers. Reversing reverb also became a hugely popular technique during the late 1980s and early 1990s. To achieve this effect, you firstly need to reverse your source sound, before de-coupling it from the reverb it triggers. This is easy to do if your DAW allows you to solo your auxiliary returns. Once the auxiliary is soloed, bounce the reverb, which, of course, will sound 'backwards' due to the reversed nature of the source sound. Then, bring the reverb back into your DAW and reverse both the source sound and the reverb so that they're the right way around. The reverb will now grow in volume 'into' the original, dry sound.

Experiment with tape emulation plugins

The '80s and '90s offered synthesizers whose sound have, like those of their 1960s and 1970s forebears, gone down in pop and dance music history as classics. But it's worth remembering that the sounds these instruments could produce – alone – were not the only participating factor in the way many records from that era sound. The hard disk recording revolution we take for granted arrived, for most studios, late enough to ensure that most records from the '80s were recorded to tape. If you're inspired by sounds from those eras, experiment with tape emulation plugins to properly situate your productions.

Further refining bitcrushed reverbs

Earlier, we looked at how digital reverbs from the '80s were prone to characteristic aliasing during their decay stages, and we replicated this by inserting a bitcrusher after the reverb on an auxiliary bus. Some reverbs displayed this sonic quirk just as the reverb decay faded to near silence, so if you're looking to finesse the effect, you could experiment with setting your bitcrusher up on a second auxiliary channel and sending the reverb 'on' to this channel from its own auxiliary. If you then automate the level of the bitcrusher auxiliary's return, you can introduce this only when you want it, making the effect

Work with channel strip plugins

Many '80s records were recorded to tape, so in order to make records with hardware synths, mixing desks were a requirement for every studio. While MIDI connections ensured that data zipped from sequencers to synths and sound modules, those synths then converted these signals into audio which was connected by 1/4" jack plugs to a mixing desk. Here, they could be balanced, EQed, panned and so on. Experiment either with finding a way to pass your plugins out of your computer and back in again, or by using gain and channel strip plugins that allow you to emulate a mixer's behaviour.

Deliberately limit your FX provision

Today's DAWs offer as many effects as we could wish for, but things weren't always so simple. Onboard effects, such as reverb, only became standard on synths of the late 1980s onwards, and the idea of adding different effect types to every part of a multitimbral performance was a pipe dream. The old adage, 'Using a single reverb helps glue a mix together' stems from this time – if the reverb you choose is appropriate for a number of instruments, they can feel more 'connected'. If you're drawn to a 1980s approach to programming, it can pay to keep effects choices deliberately minimal.

The 1980s: a technological timeline

To understand the music of the 1980s, you need to comprehend the rapid technological developments that underpinned it, which changed the course of music history and opened up new avenues of sonic possibility to musicians working in pop, dance, jazz and film composition. Let's take synthesizers as an example – coming out of the late 1970s, subtractive synths were king, but as the 1980s took hold, a number of new sonic developments took place. This was perhaps best demonstrated by Yamaha's DX7, which was released in 1983. This used Yamaha's seemingly (at least initially) baffling 'Frequency Modulation' synthesis ('FM', for short) to produce bright, shiny sounds, the likes of which 'regular' subtractive synths struggled to create. The electric pianos, bells and tines of the DX7 were everywhere during the 1980s, but this was also an instrument to turn to for warm string pads and rooted, hard basses.

The DX7 forced a response from a range of other companies, and Roland's Jupiter-8 was the main rival, but it wasn't until their D-series instruments that Roland finally caught up with the DX7's success. The D-50's Linear Arithmetic (LA) synthesis approach provided its own blockbuster smash hit from 1987 onwards. So popular was the D-50 that it had out-sold the DX7 by the end of the decade. Eric Persing, now of Spectrasonics, was among the chief sound designers for the D-50, and his sounds became classics in their own right, being ported from one Roland synth to the next throughout the 1990s.

Not to be outdone, Korg provided the world with its first superstar workstation, the M1, in 1998. The workstation concept already existed, whereby synths offered onboard sequencing and multi-timbrality, so that several parts could play back at once, allowing a whole track to be produced within a single instrument. But with its combination of ear-catching new sounds, onboard effects and more sophisticated sequencing, the M1 swept all before it, becoming the best-selling synth of its time between 1988 and 1995.

If important developments were taking place in the field of synthesis, they were nothing compared to the giant strides that sampling took over the same period. At the dawn of the decade, the Synclavier set the benchmark for what 'sampling' could be. The only problem was that almost nobody could afford one, due to the six-figure retail price. While multi-million-selling artists could bring the Synclavier's tones to their records, most had to bide their time. The Fairlight CMI took a step in the right direction, but at $25,000, it too was beyond the reach of most. As the cost of computing components fell through the floor in the early 1980s, so sampling suddenly became viable for many more producers, with E-mu's Emulator II and Ensoniq's Mirage both examples of mid-'80s instruments which helped to take sampling into the mainstream.

> ## "Akai's MPC series overlapped with their iconic S-range of samplers"

Akai's MPC series of instruments, which arrived in 1988 and which overlapped with their iconic S-range of samplers, picked up where these instruments left off, and with Roger Linn having been brought in as a design consultant, it's no surprise that Akai's units became particularly popular with beat makers and the hip-hop community in particular.

By the mid 1980s, the MIDI protocol was standard across all synths, and sequencers, were also developing fast. Notable examples include Casio's CZ-5000 (1985), Yamaha's QX5 (1986) and Roland's MC-500 (1986). Dedicated hardware for sequencing was increasingly fighting a software equivalent by now too, with C-Lab's Creator for the Atari ST becoming an industry standard from 1987 onwards. Whichever technology you dig into, the musical landscape at the end of the 1980s into the early 1990s bears so little resemblance to a decade earlier, it's no wonder this technology is still making its influence felt.

Early drum & bass breaks

Let's create a drum & bass break by first preparing our own, programmed source material at half-speed

Whilst modern software samplers are awash with staggering capabilities, the limited recording time and less fully specified featuresets of their hardware forebears are nevertheless responsible for providing some classic late '80s and early '90s sounds. Early D&B producers relied on technology like Akai's S1000 and MPCs, and Roland's S760 to sample and chop up breaks and produce patterns radically divorced from the speed of their chosen source material. The *Amen* break is, without question, the most famous example of this approach, but if you're drawn to the simplicity of this kind of sampling, why not create your own 'breakbeat' from adopting the sampling approach of the early drum & bass pioneers? All you need is a little programming, some decent drums, and some basic maths.

> We're starting with a four-bar drum part programmed from FXpansion's BFD 2. We're working at 82bpm, and we've programmed a pattern which features some syncopation. In particular, rather than placing snares on beats 2 and 4, we've got snares halfway through beats 3 and 4 in some bars.

> We render this as an audio file and drag and drop it into a sampler. We want to ensure that the sample can play back across a number of keys, so we place the original sample on C3 and ensure that the key range extends to an octave higher – C4.

> Triggering the loop an octave higher plays it back at twice the speed, providing that immediate drum & bass feel of the early 1990s. We can hold the sample down to create a two-bar loop at 164bpm (2 x speed = 1/2 original length) or trigger it in repeatedly to build new rhythms.

Creating Wavestation-era sequences

The Korg Wavestation was great for creating 'wave sequences', note patterns which pulsed or move sinuously. Here's how to ape the idea

> We're going to use NI's Massive to create our set of raw waveforms. We select Squ-Saw II first. We want a 'solid block' of sound, so we modify the amplifier envelope to produce a sustained tone. We create a note which lasts for four bars and render this as an audio file.

> We repeat this process for three more waveforms, selecting Woody, Math I and Escalation I, setting blend balances between the waveforms we like before rendering each one as a new audio file. We bring these audio waveforms onto new audio tracks but they're muted for now.

> We add two more waveforms. The first is the deep-sounding Strontium, and the second uses the Noise generator instead. We render these final waveforms as audio files too, so that we're ready to start building our Wavestation-like sequence.
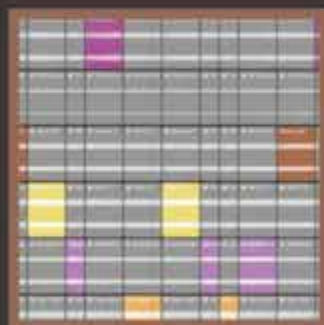
> We unmute the audio files but we don't want them to play together. We chop them at various points on the grid, so they're all cut in the same places. We then choose one region to play at all of the edit points, muting the others. We do this for the first two bars.
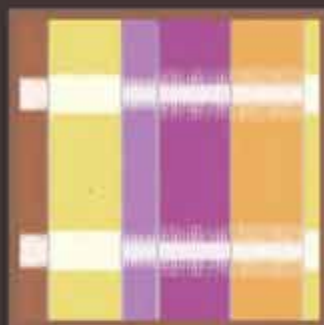
> This creates a sequence-like effect but there are some unwanted ticks where one audio file meets another. We move all of the selected sections down to a new audio track and set up short crossfades between each one so that the audio plays back more seamlessly.
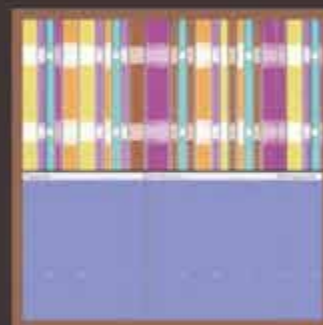
> We adjust a couple of regions so that the noise waveforms fall on beats 2 and 4 of each bar, giving the sequence a slightly more rhythmic quality, and we add a kick. If you want to take this idea further, bounce multiple pitches so that you can create different pitch steps throughout your sequence.

Chloé

The enigmatic French DJ and producer invites *Danny Turner* into her Paris studio to discuss her explorative approach to sound and the studio techniques behind her new album *Endless Revisions*.

Despite studying as a lawyer, Chloé Thévenin had a much greater passion for her humble vinyl record collection. The art of DJing struck a chord at university, later flourishing into full-blown residencies at renowned Parisian nightclubs such as Le Pulp and the Rex Club.

Having grown up to the sounds of rock, folk and the pulsing rhythms of EBM, Chloé's eclectic tastes stimulated her imagination. Early productions exhibited an investigative craving that would surface on self-penned albums such as *The Waiting Room* (2007) and *One In Other* (2010).

After a lengthy period of gestation, during which Chloé collaborated with numerous artists and the revered French music institute Ircam, she returned to the studio to create her latest opus, *Endless Revisions*. It's a sensory body of work, showcasing the artist's personal growth and incessant hunger for sound exploration.

What was your first introduction to the world of music technology?

"I started playing the guitar when I was 15. I don't play guitar so well now, but it was my first instrument and the easiest to learn. I was listening to folk and rock music and had a little collection of records; then I discovered electronic music and bands like Front 242. This kind of music mixed rock music with synthesisers and electronic drum rhythms. I think it was a kind of industrial movement mixed with new wave music from the '80s. If you hear this music today, I still think it's amazing."

You learned a lot from Steve Reich. Was sampling an important part of your early sound?

"For me, it was more about minimalism than sampling. It's all about repetition, but I think electronic music gets a lot of inspiration from Steve Reich. He was a leader in electronic music and an influence for a lot of people – certainly one of the pioneers. What is very interesting about him is that he was very into the boundaries between contemporary and classical music and used a lot of technical phasing, but naturally, without using effects. He used the technique of dephasing too."

You did a project with Vassilena Serafimova based on Reich's work…

"I always wanted to collaborate with a musician on a project, and this was a good chance because Vassilena's a marimba player and the producer proposed that we get inspired by Steve Reich. One of the major compositions he did was called *Music for 18 Musicians*, with marimba and many other instruments. If you know the piece, you can recognise the patterns, but of course we had to play it differently because there are only two of us. The idea was to use some of those musical patterns, re-adapt them and play live together. I sampled what Vassilena played and she would play on top of that; then we used some phasers in the same way that Reich was using them. We had a lot of fun using these techniques and eventually started to create some of our own music together."

Did DJing come long before production?

"I started to DJ about 20 years ago and got into it very naturally because I was collecting a lot of music and searching for vinyl. When I discovered electronic music, it wasn't like it is today. There was no internet, so you had to live with whatever you could find in the record shops. I had all this vinyl and was going to parties, so I started to DJ when I was at school. Then I went to university and studied penal law, which has nothing to do with music, but I suddenly had a lot more time to DJ and make music. I produced my first EP in 2002 and started to get more and more gigs. Then at one point I thought, I don't want to be a lawyer. That was a very natural decision, because I was getting more and more proposals to DJ and was really into the whole technical process behind music production."

Can you tell us about your work with Ircam?

"When you're into electronic music and you're French, you know Ircam because they make a lot of software. One of the most well-known ones they [own the rights to] is Max/MSP. Many years ago, I took part in a little conservatoire where I could study electro-acoustic music. It was a mixture of technical, contemporary, concrete music and software like Max/MSP, which was an interesting approach. I did that for a few years besides DJing and production and was always interested in doing these geeky things and trying to inspire people. Ircam contacted me two years ago because they had created a project and wanted to work with an artist that would be open to experimenting and collaborating in a live situation. It was very technical, but a lot of it was thinking about how to help people collaborate through Wi-Fi and find this balance where the audience could be creative and not just part of some geeky experience."

Can you tell us more about how you collaborated or performed with the audience?

"There were two steps. I was playing live with an iPad and if the audience were connected to the local wireless I could control the sound inside their mobile phones. I could spread the sound with my finger and choose the sounds people could access. The audience could also play the sounds on their phones. For example, I'd give them a white noise sound on their phone and if they moved their finger up the sound would move to a higher frequency, or if they turned their mobile in a different direction the volume would change. We discussed all these little details with Ircam and how it could be fun and creative for people, and that first step was called V1."

Moving forward, how did you develop that?

"We did it a few times and the results were interesting, but the younger people were too focused on me playing live, so we thought it would be important to get them involved creatively and give them more music. So for V2, we got all the people connected on their mobile phones to the local Wi-Fi

and each person had different layers of a track. There were about 15 layers and each person had one element – one had the bass, another had the kicks, someone else had the snare, and if the people were close together the music could be played. If someone playing the bass moved away, or left, there was no more bass, so someone else could come in and play bass."

Some people just use the production tools that are available, but you seem committed to exploring beyond that.

"I think that trying different approaches helps you to be more independent and also makes you more creative, and this is my main goal. Of course, it's interesting to use what you're given, but it's also interesting to find some other elements, even if they are often quite complicated to understand. For example, whether I'm playing live or in my studio, I like to use pedal effects. I could buy some gear that does everything all-in-one, but by using all these little cheap and fun pedals you build your own personal sound. I'm always open to discovering new stuff and I'm interested in understanding how to mix different elements together, because when you're always questioning things, you're more likely to find something inspiring."

Presumably, that's why you're interested in 3D and binaural sound?

"My experiments in binaural sound are similar to the Ircam project. I met some sound engineers at national French Radio who had an innovative approach and asked if I wanted to mix one of my tracks in binaural sound, which is like 3D sound. I thought it was a fascinating idea and fun. At the time, I was working on a track called *The Dawn*, which came out earlier this year and is also on my new album *Endless Revisions*. When I met them, I was thinking, maybe I need to intensify the stereo so when I mix it in binaural the stereo field will sound bigger. The more sound and frequencies you use, the more interesting it can be to listen to when you're using 3D sound. It helped me to think about composition a bit differently, so we mixed the track in binaural and discovered all these other little sounds - behind and in front - and everything

getting direct feedback from the crowd and can be influenced by the sound system or the architecture of the building, so I try to keep this feeling from the club world and use it when I'm making tracks. I could play a techno or house set at the weekend and then on the Monday write a track that has the same feeling of energy relating to my live performance. Then I get really excited, because one thing feeds into another."

own music. Everything is made very organically. It took me quite a while to follow *One In Other*, because I had the feeling that I needed to evolve my technique and my sound and go a bit deeper. I want to be proud of my music and satisfied with the end result. If people don't like it, I'm obviously disappointed, but that's the game and it's always a challenge. Yes, you always want to please the audience, but there has to be a balance. It's like when I DJ, I try to impose my music on the crowd, but at the same time you want to please them."

> "I was really fascinated by binaural, but at the same time, when people come to a concert, they don't want to wear headphones"

sounded wider and bigger. At that point, I was really fascinated by binaural, but at the same time, when people come to a live concert, they don't want to wear headphones."

You mentioned the ten-minute track *The Dawn*, which sits somewhere between club music and home listening. Is that the intention?

"Yes, that means a lot to me as this is exactly the kind of thing I am looking to achieve. When I DJ, I'm

On the other hand, some of your tracks such as *Nuit Noire* and *Outer Space* are very deep, dark and cinematic.

"For me, an album has to be like that – it has to have a vision, otherwise I would just write EPs. For me, it's nonsense to make an album of just club music. I'm more interested in the architecture of the music and trying to build something or collaborate with an amazing graphic designer and have other musicians around that have nothing to do with my

Focusing on your studio, one of your favourite synths at the moment is the Dave Smith Mopho X4?

"It's funny – I have a lot of old synthesisers and software, and I bought the Mopho X4 because I wanted something completely different that would surprise me. It actually gives me a library of sounds and has some old synth patches from the Roland SH-101 and other synths, although I already have an SH-101. The Mopho has a lot of presets that are really inspiring, but you can change them a lot using the effects. I'm actually using it live a lot more, and I'm really happy because I bought it four

Is being able to bring your hardware out of the studio and into the live arena important to you?

"Yes, it's important than I can translate the sound of my studio into a live environment, but there are some things in my studio that I can't bring into my live set. I have a Chandler TG2 preamp, which is not something I can bring. It's super-beautiful, very good for the sub range and the mids, and very warm. It's my main preamp, although sometimes I'll use the preamp from the UAD card, which is also nice. I also have a Thermionic Culture Vulture, which helps me to make the sound wider and give it a little bit more distortion. These things are really made and bought for a studio, a bit like my Roland VP-330, which is very heavy and old. I never want to use it in a club or at a festival and prefer to keep it safe and warm. It's a bit like having a car. I don't have a car actually, but I can imagine!"

years ago and it brought something new to my live set. To be honest, I don't buy new synthesisers very often."

…although you do have a Korg Minilogue, which was released fairly recently.

"Yes, and what's very interesting about that is that it's very light, so I can take it everywhere with me. The Minilogue is very easy to use and has an

You like to use analogue reverbs?

"I like reverbs that are inspired by the '70s and '80s because they really do an amazing job, and I like how companies are getting inspired by vintage reverbs. It's great that they make the effort and are able to take all the good things from vintage gear and mix them with today's digital technology. Of course, you can still buy many synths that were made in the '70s and '80s,

You seem to have a preference for hardware reverbs and pedals?

"Actually, I like to mix both. I'll never go 100% with any manufacturer, even UAD – although their plugins are amazing. Many years ago, the software reverbs were not very interesting and it was all very digital-sounding. Now, computer processors are so much deeper and quicker, everything is much cheaper and the competition between the companies is much better. So I think the software now is very interesting. They've been inspired by all the big studios, so nobody is excluded anymore. But I also like having access to all the buttons, because I'm a DJ and I'm always thinking about ways to

> ## "I think the software now is very interesting. They've been inspired by all the big studios, so nobody is excluded anymore"

amazingly wide range of presets. It's one of the main things I use live, because it creates elements that I use in the studio that can also be brought into my live performance. It's also polyphonic and adds an analogue sound, and it's not very expensive for what it is. You can take a sound and choose very quickly between monophonic, polyphonic or arpeggio and go deeply into something that's very interesting, in between an old-style synthesiser like the ARP and something new."

but a lot of companies like Roland are rebuilding mythical vintage stuff and making it very small, a lot less expensive, and easier to use. For example, I have the TR-8, which is inspired by the TR-808. Even if I had an original TR-808 in the studio, I would definitely not use it live - I would use the TR-8. Vintage stays at home and I use new stuff live with pedal effects, like the Boss DD-7, which is an amazing delay, or the OTO BAM reverb."

play music in a more natural and organic way. I have a fascination with vintage, because I'm quite possessive about things, but if everything I had was 100% vintage I would probably get bored."

We understand that NI Komplete is one of your go-to software libraries?

"Yes, I started with Native Instruments many years ago. One of the first things I discovered and started using was Absynth, which is a semimodular synthesiser. What I like is that it had a lot of very different sounds and a function called Mutate that helped you to make many variations of a sound. It had a lot of beautiful textures and harmonies and was very easy to use and customise. I also use Battery a lot for adding effects to synthesisers, or any sound. Sometimes I record a vocal and add a plugin effect from Battery and it will come out very different to how you expect, which means you can often have nice surprises."

Presumably, you're an admirer of Native Instruments Kontakt too?

"It's amazing, because you can do a club track in Kontakt or use it to make movie soundtracks. What I like is that it's a sampler but it has very high-quality string and orchestral sounds that are very expressive because they were recorded with amazing musicians using amazing microphones. When you use them, you can hear all the subtlety and expression of a real musician, which is very different from a MIDI sample recording. The library that I discovered recently and really like is called West Africa; it's amazing and they're always releasing new plugins too."

You've used many of the various DAWs on the market. Which one appeals to you the most right now?

"When I started to compose, I began with Cubase because there was not much choice. After that, when computer processing got more powerful, I used Logic for many years. Of course, this was before Ableton Live existed. Many people I knew changed to Ableton, and year after year they made more progress, so after a while I started to switch between using Ableton Live and Logic before slowly moving

YES IT'S LOUD ENOUGH

Chandler TG2

"This preamp is a recreation of the EMI TG12428 used in Abbey Road's recording and mastering consoles in the late '60s. Everything sounds beautiful after going through the TG2, and you can even get a bit of distortion from it."

Roland JX-3P

"This is really fun to use. It has a few presets that can be modulated very easily using the faders and knobs for each element, which makes it very intuitive. It has a deep analogue filter and VCA, and I got the PG-200 programmer so I could go even further with the modulation."

Roland TR-8

"Roland is doing good stuff at the moment in remaking their classic gear, and the TR-8 is really cool. It emulates the TR-808 and 909 in one drum machine and the sounds are really close to the original. It's very easy to build your own kit and has become my main drum machine to use live."

Roland VP-330

"A classic analogue synthesiser with the best vocoder I have ever seen and a beautiful string/choir section that has a very specific sound. It emulates your original vocal to make a synthesised sound, but you can also use the vocoder and strings at the same time."

Do you feel it's important to get a high-quality recording at the source rather than relying on too much post-production?

"Unfortunately, many years ago I did a lot of recording with a microphone that was not so good and was having to do a lot of equalising and compression afterwards, which is not good either. I think it's very important to spend a lot of time creating a nice recording so you don't have to spend too much time in post-production. If you take more time to produce a good recording first, it will already sound as though it has been mixed naturally. Maybe this is one of the reasons why people are into vintage stuff, and why when you listen to vinyl today it sounds really rough and people want to go back to that rough sound and get out of the digital world."

**Thermionic Culture
Culture Vulture**

"Another distortion I have in my studio, but in rack form. It's one of my favourite pieces of gear. It puts distortion on tracks, but can also give recordings some space and warmth. Its valve distortion has a very subtle nuance to it and very beautiful harmonic distortion too."

**Oberheim
Matrix 6R**

"A typical mid-'80s MIDI rackmount synthesiser with six-voice polyphony and a wide range of programmable sounds. You can create patches or edit existing ones, and the oscillators are very rich. I often put it through my effects pedals."

OTO Bam

"OTO is a little French company that is really creative and has produced a series of gear that is very powerful. This is one of my favourites: a stereo reverb inspired by '80s digital units. It has a very specific musicality and I use it in nearly all my tracks these days."

to Ableton Live. I really like clips, because you can build a track and try different things very easily, and it was the clips function that actually made me change to Ableton. But I still have Logic, so sometimes I will start a track in Logic just for a change, but generally I'll use Ableton and mix the track inside. Basically, I'll take each track out of my computer, put it through a preamp to make the sound wider, and record it back into the computer."

Fairly recently, you changed to an Orion soundcard. Did that make a big difference?

"I now have an Antelope Audio Orion 32 soundcard, and when I changed I could really tell the difference. Changing the soundcard was a very big step up for my music, because I could really feel the quality of the converter and everything suddenly sounded so much more interesting. It's always a question of money of course, but I think that putting money into a soundcard is very important – much more important than putting money into a synthesiser. I must say that, at first, I thought it was the mixer that was making the difference, but I was very surprised to learn that it was the soundcard and that I should have got the Orion before."

The way modern musicians employ compression has, sometimes, attracted criticism. What's your viewpoint?

"When you listen to music on the radio, you can tell that everything is compressed really hard. That means people become used to a sound that is really compressed, but if you listen to music from the '80s and compare it to today, you'll hear that it's technically superior. For example, if you listen to *Vogue* from Madonna, you can hear that the drum machines and synthesisers are not compressed and sound very simple. I like this kind of production, because it's more natural-sounding and organic and doesn't require so many effects."

Do you feel it's about a lack of resources or lack of expertise?

"Of course, it's a question of money. Producing a record used to be very expensive and a studio session used to cost a lot of money. You had to pay the producer and an engineer, but today people make music inside the box and master it themselves. It's great that they can do that, but I am very shocked to hear that, even though the music is nice, I hate the mastering and the mixing. It's not just a question of liking or not liking; it's a question of quality, and some people don't care about the quality, which makes me sad somehow. Sometimes, I don't want to play the music even if I like the track because of the quality of the mixing and mastering. Mastering is the last touch and very different to mixing, so I think that people should spend a little more time and money and respect this job, because there's a reason why mastering is such an important job." FM

WANT TO KNOW MORE?

Chloé's new album *Endless Revisions* (Lumière Noire Records) is out now. **www.listentochloe.com**

FIRST OUR WORLD WAS A DISC. THEN, A SPHERE. TURNS OUT, IT'S TWO DISCS!

THE POWER OF MUSIC!

Guy Andrews
Fjell

2017, Houndstooth

VIDEO ON FILESILO

Guy Andrews' music has evolved from relatively straight-up techno into a more eclectic, textured and experimental take on the sound. His tracks have seen releases on choice labels such as Hotflush and Houndstooth and have won him fans as diverse as Massive Attack, Mary Anne Hobbs and Scuba. *FM* took an atmospheric trip to Guy's Bromley studio to find out how he made his monumental post-rock/techno hybrid *Fjell*.

What's *Fjell* all about?

"'Fjell' means mountain in Norwegian. I was living in London but I wasn't really too keen on living in the city. I went to Norway to play a gig, and having a few extra days there and going up a mountain made me realise what inspires me to write music: it's not cities and densely populated areas, it's actually vast open spaces and beautiful landscapes.

"This trip set off a hobby of mine, hiking up mountains, and I was fortunate enough to visit a mountain in Wales called Cadair Idris a few months later while I was writing this song. There were parts of this hike where you would have to physically push yourself to get up. So you'd have a really steep part, but then you're rewarded with an amazing view, and I thought that would be a good way to structure a tune.

"It's kind of lucky that with post-rock and techno a lot of it is based around long build-ups, tension, release… that kind of stuff. So it was actually quite easy to map out this hike in music, especially with post-rock where you can go from an epic crescendo to something really quiet.

"I come from a techno background so this was really the first time I could do this stuff, so I realise conceptually this might be sort of basic, and maybe clichéd, but ultimately I don't really care that much – this is me just figuring all this stuff out!"

"I went to Norway to play a gig, and having a few extra days there and going up a mountain made me realise what inspires me to write music: it's not cities and densely populated areas, it's actually vast open spaces and beautiful landscapes."
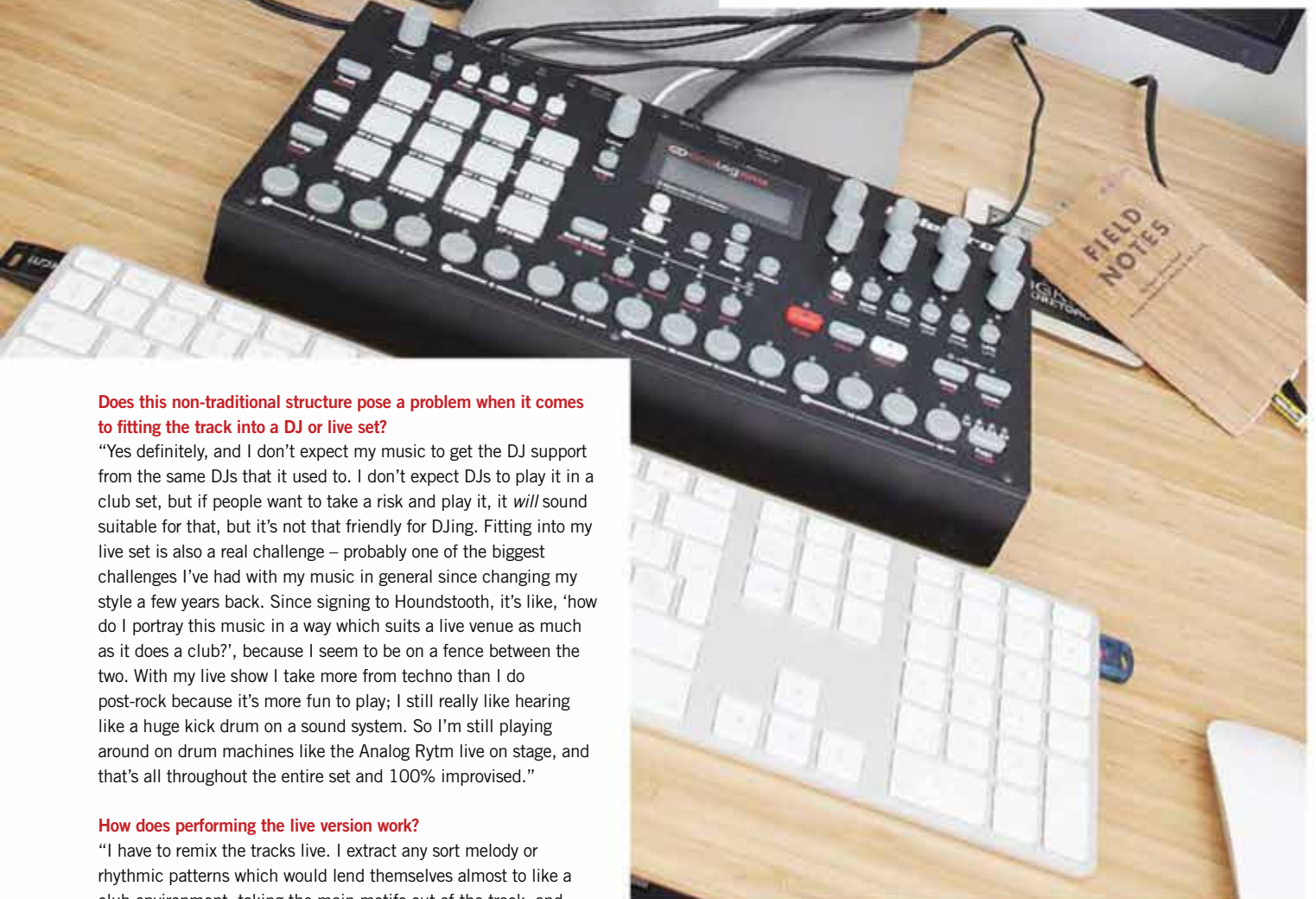
Does this non-traditional structure pose a problem when it comes to fitting the track into a DJ or live set?

"Yes definitely, and I don't expect my music to get the DJ support from the same DJs that it used to. I don't expect DJs to play it in a club set, but if people want to take a risk and play it, it *will* sound suitable for that, but it's not that friendly for DJing. Fitting into my live set is also a real challenge – probably one of the biggest challenges I've had with my music in general since changing my style a few years back. Since signing to Houndstooth, it's like, 'how do I portray this music in a way which suits a live venue as much as it does a club?', because I seem to be on a fence between the two. With my live show I take more from techno than I do post-rock because it's more fun to play; I still really like hearing like a huge kick drum on a sound system. So I'm still playing around on drum machines like the Analog Rytm live on stage, and that's all throughout the entire set and 100% improvised."

How does performing the live version work?

"I have to remix the tracks live. I extract any sort melody or rhythmic patterns which would lend themselves almost to like a club environment, taking the main motifs out of the track, and

THE GEAR

Software:
> Apple Logic Pro X
> XLN Audio Addictive Drums
> Eventide Blackhole
> NI Guitar Rig 5, Reaktor, Absynth
> Positive Grid Bias Amp
> iZotope Neutron
> FXpansion plugins
> Voxengo plugins

Hardware:
> Focal CMS 65
> Studiologic SL88 Grand
> Elektron Analog Rytm

blending them into a more stripped-down kind of club friendly, but still very much live performance, format. I want to kind of keep the parts and the tracks as minimal as possible, so I don't have all three guitars playing at the same time like they are on the track. But I'll have, say, one guitar doing the top line melody or some tremolo picking and this particular track. So people will know what track it is as they can hear the top line melody that will often be played by a guitar. But the layers of guitars, which sort of bulk it out in the studio recording version, are completely omitted live, and replaced either with sounds off my Blofeld, like completely different melodies, or just leaving the space. When you're playing live, just leaving space for the sound system to work, to move, not overcrowding the mix, is so important for making it impactful.

"I noticed I can really increase the intensity of my sets sonically when I break out from a more minimalistic level of thinking and start to layer sounds. Even though I do it all the time in my tracks which have loads and loads of layers – if I bring that subtlety into my live show I can create really intense sections of lots of layers. Then I go back to a more rigid club structure where it's kind of drums, bass and the melody line, working the dynamics of the track like that, and I do this a lot when performing *Fjell*." FM

Creating *Fjell's* post-rock-esque guitar parts

Recording the immense melodies required playing post-rock-inspired guitar, plus mountains of plugins

01 >

"I have two guitars and I used both on this track, a Fender Mustang and a 7-string PRS," Guy says. "I'm running the PRS through a saved channel strip which I've used for years which gives me a good post-rock, reverbed sound from the word go."

02 >

The PRS is fed through Voxengo Crunchessor to compress it, then a Space Designer reverb and Stereo Delay before it gets to the amp stage. "For guitar amp modelling I often start off with Guitar Rig because I quite like the sound of the Citrus amp – it adds a nice high-end overdrive," enthuses Guy.

03 >

More reverb, EQ and delay are applied in Guitar Rig, then the signal runs through another amp sim – Positive Grid's BIAS Amp. "I don't know what I'm doing in this at all. I'm sure if I did I wouldn't have to have so many plugins in this signal flow to create a usable guitar tone!" Guy confesses.

04 >

The second guitar track is from the Fender. "It's got more clarity and high-end, whereas the PRS is more distorted. It's got a similar stack of plugins, but I'm not using Guitar Rig, just BIAS Amp, and adding more reverb via Eventide Blackhole."

05 >

The Mustang is also EQ'd and run through Waves OneKnob Filter which removes the high-end during certain parts of the track. Guy notes that various effect parameters are automated on the guitar tracks, particularly the Gain level Guitar Rig's Citrus amp on the PRS track. "It's good with automation because you can gradually increase distortion to create really nice builds."
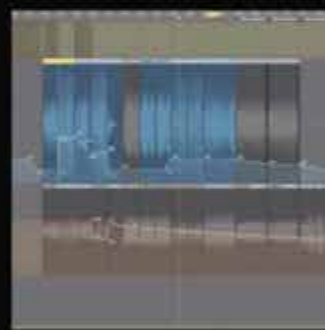
06

All the guitar channels go into a guitar buss where they're compressed and EQ'd, and also further distorted and delayed. "I've ended up with quite a messy post-rock sound, but what I was using the guitars for was melody and post-rock elements."

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Muzzy, *Spectrum*
We catch up with big room bass don in his Hampshire studio, to find out how he created the D&B monster from his Spectrum EP

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DSI
Prophet Rev2

DSI's Prophet 08 eight-voice polysynth has a had a long run compared to many synths on the market and has many fans due to its powerful modulation, reliability, roadworthiness and DCO-driven, Curtis-filtered sound. Now the P08's successor, the Prophet Rev2, has arrived, we've been treated to the addition of a sub oscillator, an improved front panel layout, extended 'slop' functionality (for more vibey tones), waveshaping on all oscillator waveforms (shape mod) plus a new smarter screen. There's also quick modulation shortcuts for easy setup, and – the biggie for sound designers – a new modulatable FX engine with a plethora of great-sounding effects.

In this *Producer's Guide*, we'll take you through a few of the new features, showing you how they can be applied to sound design for all types of sounds and production styles. In particular, we'll look at injecting movement into pads, along with building a dual-layered bass sound. While we can achieve more vintage tones with the Rev2, it naturally excels at futuristic, atmospheric sonics – here's the lowdown!

Potential live and stage applications

There are many contexts the Rev2 can be used in – it covers a lot of areas both sonically and functionally. In the studio or for live, you could use it as a straight-up lead, bass or poly machine to cover pop, soul, funk or rock vibes. However, it's equally at home for making more twisted, ambient and epic sounds using noise, filter resonance, deep modulation and the new effects engine. It works particularly well as a deep sound design machine (way more than the Prophet 08 does) and it's very easy to take the seed of an idea in your head and develop that into an actual finished sound that encompasses your musical thoughts.

With eight modulation slots, four LFOs and modulatable effects, plus an auxiliary loopable envelope and gated sequencer (which can be used as a 4-track modulation source), you have a serious number of options to play with to keep your sounds and tracks interesting. It's hard to reach the Rev2's ceiling and run out of places to take your sounds as there's so much available (except that you can only use one effect per-layer).

> It's hard to reach the Rev2's ceiling and run out of places to take your sounds

Particularly with the 16-voice model, you have a lot of mileage for live use. For example, you can have two x 8-voice sounds available at any one time using the split function, so each patch you select could contain two radically different sounds (perhaps for a verse and chorus). This essentially gives you two separate synths, addressable from two separate MIDI channels (via your DAW or the internal/an external sequencer). In addition, each of these two sounds within a patch can be sent out of its own stereo output with its own effect, which is great for tracking/performing with two completely different sounds simultaneously (or for sending out to the FOH engineer for mixing/processing live). You could also have a poly-sequence on one layer and play over that using a different sound using the B layer (though there's currently no way to do hands-free sequence transposition). Of course, we only have ten fingers but if you send 16 notes to a single layer on the Rev2 via your DAW, you're going to be able to have monstrous 16-voice pads happening. Only a few analogues are capable of this level of voice count.

Setting up splits and layers

With two eight-voice layers available in the Rev2 16, it'd be silly not to build dual eight-voice splits and stacks! Here's how…

As mentioned earlier, splits and layers are a huge deal, and a bonus to have in an analogue synth (particularly when you can have two four-voice or two eight-voice layers available in a split/stack). This allows many permutations for live use and for recording. For example, chords on the left and right, chords on the left, lead on the right, bass on the left, lead on the right, sequence on the left, arp on the right… the list goes on! However, if this was a pain to set up, the appeal of the Rev2 would be diminished; thankfully it's very quick to do. Here's a walkthrough showing you how to set up a stack and a split sound easily…

> Initialise your sound via option 25 in the Global menu. Next, build your sound on layer A only. Once happy, name and save the sound to any user location. Now hit the Edit Layer B button to work on the second layer.

> While the Edit layer B button remains lit constantly, tweak the second layer (B) to your desire until it works successfully atop layer A. Once you're happy with your layered sound then save once again. Now let's turn this sound into a split.

> Hit the Split AB button. (Layer A goes to the left and B to the right of your split point automatically). Press and hold the split AB button (the split point display will appear) and press any key to set your split point.

1 Use the indispensable pan-spread feature or per-layer panning for super-wide sounds. Also try modulating panning from an LFO or use chorus and short reverbs/delays.

2 **The digital resonant high-pass filter (in the effects menu) is great for scooping out bass/mud from sounds or for adding a distinctive, vibrant texture.**

3 If you modulate the reverb mix level with a deep LFO assigned via the mod wheel, you can get some great pumping reverb effects happening.

4 **Try recording each side of a split or stacked patch simultaneously into your DAW; each layer has an independent set of stereo outputs/effects engine. Very handy!**

5 Controlling your sounds without taking your hands off the keyboard is liberating. Take advantage of the pedal and MIDI foot/pedal control and by utilising aftertouch too.

Creating movement in pad sounds

You've made a basic pad, but how do you take it to the next level? Here's some ideas to try…

01 >

Initialise your sound using option 25 in the Global menu. Pick a saw wave on osc1 and a saw/tri on osc2, with a 50/50 mix between them. Dial in some fine tune to add movement and some slop for more vintage randomness.

02 >

Use the 4-pole filter and bring down the cutoff control for a more moody atmosphere. Add some pan-spread to widen the sound, then introduce a slow attack and long release on the amp envelope. Add glide, with some noise and audio mod for extra texture.

03 >

Thicken your pad using the sub oscillator. Now let's assign some modulation to osc1's shape via LFO1 and send LFO2 to filter cutoff to add more tonal animation. Tweak the filter envelope DADSR stages taste. Assign the modwheel to 'OscAllFreq' for adding pitch swoops/variation.

04

To finish off your sound nicely, add reverb or delay in the effects section (choose whichever you prefer), then experiment tweaking the effect Param 1 and 2 dials until you get a long atmospheric tail happening. Finally, assign either/both effect parameter knobs to aftertouch.

How to…
Add grit, randomness and 'fibre'

> From the distortion and ring mod effects through to slop and audio mod (audio from osc 1 is used to modulate the filter's cutoff), plus using noise alongside the oscillators (and for modulation), you have a lot to play with. DCO synths are generally cleaner than VCO synths, but handily, the stability of the tuning and the stable waves in the Rev2 all allow you to be very detailed with the application of grit and texture. Try keeping a clean sound on layer A and then use a copy of that sound (or a different sound) on layer B with the distortion effect active; this gives you control over the distorted element of your sound.

How to…
Get more mileage from one oscillator

> It's tempting to always use both oscillators layers plus the sub, but you can get some great sounds by approaching sound design in a 'less is more' way. You can take a simple saw wave and modulate its shape via an LFO, add some pan spread, and then apply the chorus effect for thickening, while modulating that too via any source you choose. Also, be sure to use all the available controllers such as mod wheel, aftertouch and foot control (assigned to various parameters) and you'll find you can take a basic sound and send it skywards! In particular, the effects and modulation are your best friends in this scenario.

How to…
Set up modulation in a flash

> One of the things that used to slow us down on the Prophet 08 was setting up modulation routings – it wasn't the most intuitive synth in this regard. That's all changed with the Rev2, and more often than not, it's simply a question of holding the source button in the mod section, then turning any knob/parameter to set that as your mod source, then holding the destination button and turning any knob/parameter to set that as the mod destination. Again, with the LFOs, simply hold down one of the four LFO buttons, turn the knob you want to assign it to and you're set. This is a huge timesaver.

How to…
Choose your filter model

> The Curtis low-pass filter has 2-pole and 4-pole modes. The resonant 4-pole filter (24dB slope) lets through less high-frequency content than the 2-pole (12dB slope) and it self-oscillates too, so it's better for more gooey, resonant and warmer/liquidy/effect sounds, whereas the 2-pole mode is better for more textured and wiry/fibrous/brassy/sizzly sounds. Try combining two layers, one using 4-pole and one 2-pole mode for interesting textures, and don't forget to use the digital resonant high-pass filter – it sounds great and can also be modulated by envelope 3 or via an LFO to add an animated texture.

Poly and gated sequencing
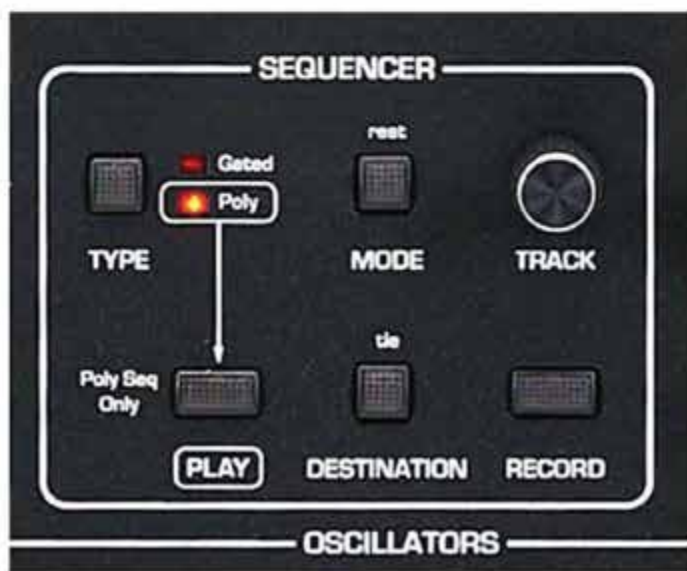
The sequencer in the Rev2 is a very useful and pretty deep feature. Firstly, when used as a poly-sequencer, you can have up to six notes stacked at a time per step (up to 64 steps are available) and this is great for coming up with chord sequences, or for using as a backing or accompaniment (especially when synced to other gear over MIDI). Providing you don't use all six notes on every step, you could also still play over the top when using one layer, or alternatively, you can use two sequence layers running simultaneously. In addition, when using gated mode you have four x 16-step sequences available which can sequence notes or route to several mod destinations simultaneously – great for evolving textures. You can also set the gated sequencer so that it only advances when a key is pressed, which is great for playing along with other live instruments or with bands. The slew parameter is also particularly handy for obtaining smooth transitions between sequencer steps.

Create some dual-layer, dirty unison bass

The Rev2 is a versatile dirty bass machine and has two layers to play with. Let's get dirty-bass making!

01 >

Initialise your sound using option 25 in the global menu. Kill the release on the amp and filter envelopes for a tighter tail-end on your sound. Hit the unison button and dial in 8-voice unison and unison detune in the Misc menu settings.

02 >

Set the pitchbend range (also found in misc parameters) to 12, so that when you move the pitch wheel it will dive or swoop up/down an octave. Now select saw on osc1 and a 50% pulse on osc2 and add some detuning.

03 >

Pull down the filter cutoff, dial in some filter envelope amount to taste and then kill sustain on the filter DADSR. Tweak the decay level to add punch to the start of the sound. Add in resonance to taste and audio mod for grit.

04 >

Now let's add layer B into the mix which we are going to use as our dirt layer. Once again, kill the Release on both amp and filter. Select a saw on both oscillators with some detuning. Add in some noise for texture too.

05 >

Add some pan-spread to this layer to give it some nice stereo movement; this allows you to have stereo animation on just this layer of your bass, while keeping the lower end of your bass (on layer A) solid and centred. Tweak filter to taste.

06

Make sure layer B also has pitchbend set to 12 and unison engaged (only use 1-voice unison on this layer). Add in some distortion for dirt. Press/hold Edit Layer B (until it flashes) to tweak both layers simultaneously.

Kiasmos

Icelandic duo Ólafur Arnalds and Janus Rasmussen combine eclectic musical histories to create a unique brand of fragile yet propulsive techno. *Si Truss* catches up with the duo to talk tape loops and concert hall raves

You'd be hard pushed to find a musical duo with with a more eclectic collective CV than Ólafur Arnalds and Janus Rasmussen. Arnalds is probably best known in the UK for his BAFTA-winning score work on the series Broadchurch, but long before he was soundtracking prime time TV, he began his career drumming in hardcore bands and collaborating with German death metallers Heaven Shall Burn. Between those two ends of the spectrum, the Icelandic musician has carved out a successful solo career blending modern classical and ambient influences, whist also working prolifically as a producer and studio engineer. Faroe Islands native Rasmussen, meanwhile, is a member of dark synth pop outfit Bloodgroup, alongside a long list of other musical endeavours.

The pair discovered a shared love of underground club music whilst Arnalds toured as Bloodgroup's sound engineer, leading to their first experiments with electronic production as Kiasmos. With a distinctive sound that blends ambient piano and strings with punchy, minimal techno drums and live percussion, the past decade has seen Kiasmos grow from a fledgling side project to one of the most exciting prospects in live techno. With their latest EP, Blurred, out now via Erased Tapes, FM caught up with the pair backstage at the label's 10th anniversary celebrations to talk tape loops, kick drums, and bringing the rave into concert halls.

Are we right in thinking the pair of you discovered a shared love of techno while on tour together?

Janus: "That's right, in 2007 or 2008."

Ólafur: "We discovered we were both into this kind of music when we were on a very long drive somewhere. I think Janus showed me something on his iPad."

Janus: "Back then I was really into early-2000s, minimal, dark 128bpm techno."

Ólafur: "We bonded over it as nobody else was into it around us."

Janus: "After that we just started hanging out and tried to make something similar."

How does the Kiasmos production process work? Do you have set roles or just throw ideas about between you?

Janus: "Olafur plays piano, but mostly we just sit around a computer and make stuff up."

Ólafur: "Very often Janus sits at the computer and I'll sit at the piano. He'll be making edits to a beat while I'm trying to figure out the melody while listening to it on loop."

Janus: "Ólafur will shout over, 'Hey, that bit's good' or 'Keep that bit going.'"

How quickly did you manage to settle into the sort of sound you wanted to make with Kiasmos?

Janus: "We had many years where we really weren't heading anywhere, I guess. It was just for fun at first; no real seriousness to it. We were happy if we got to play in a club here and there. Then it wasn't really

until we made *Thrown*."

Ólafur: "*Thrown* was the first time we used stings in a track, and after that, pretty much every song we did used strings."

Was there a moment while you were making that track that it just clicked?

Janus: "We were really against the idea of using strings and pianos, for years. That's not really what we wanted to do with Kiasmos."

Ólafur: "That's what we were trying to get away from!"

You've both done score or soundtrack work, and that cinematic feel seems to bleed into your Kiasmos tracks – are you saying you were trying to avoid that happening?

Ólafur: "The reason we did Kiasmos was to get away from that, take a break and do something else. But of course, if that's what you do full-time, that's probably what you're best at."

Janus: "I guess after years of not really getting anywhere with the completely minimal sound we were finally like, 'OK, let's try the strings'. And it just worked. It was like, 'This is nice, we know how to do this!'"

From a production point of view, how much of a challenge is it to combine acoustic elements with synths and electronic beats?

Ólafur: "I don't think it's difficult at all actually – especially stings; they sit really nicely together with electronics."

Janus: "It's more about what sort of piano or synth lines you're playing."

Ólafur: "You have to write the right material. So, the strings, we just use those as pads, so it's something that already works with those types of tracks."

Janus: "We rarely use strings percussively or staccato."

Where do the string sounds on your recordings come from? Are you recording those or do you use sample instruments?

Ólafur: "It's a bit of a mix, it depends on when things are being recorded. We also use a lot of my own samples though. Those aren't multisampled instruments though, but full progressions and phrases that I've recorded. On the first record there's quite a lot of Spitfire Audio sampled strings, but only when we have these big orchestral parts – if it goes into a solo we'll actually record that. You can't really replicate that with samples; it's impossible."

All of your tracks have really nice punchy, crisp drum sounds. What are you using to create those?

Ólafur: "A 909 [laughs]."

Janus: "It's not all that..."

Ólafur: "Well, every kick at least. Almost every song has a 909 kick."

Janus: "No… I'm sure that's not true."

Ólafur: "It is! Or at least, it's originally a 909 kick sample that we've morphed and changed so often that it's eventually turned into something completely different. But it's that originally."

Janus: "It's samples, basically. We treat them a lot though. We're not afraid of EQing and pitching things down to transform them."

What are you using to do that, is it mostly software, or are you running it through any analogue hardware?

Janus: "I use Pro Tools."

Ólafur: "It's a bit of both. Then almost all the percussion is live stuff that we record to create loops. We'll play and then chop stuff up and rearrange it."

Janus: "Usually all the shakers on the record are us ."

Ólafur: "Some snares too, and any rim shot or click stuff."

Ólafur: "Yeah, but also it's just more fun to make it that way."

Janus: "You feel more passionate about it when you know that some of the drum sounds are actually you."

Ólafur: "It's also good not to be sitting by a computer all the time. It makes it more intuitive; getting creative with your hands."

What about the synth sounds on your tracks… what gets used regularly there?

Janus: "We used to use the Juno-106 as well."

Ólafur: "That was basically until I got the Juno-60!"

Where do you record mostly? Is it in one of your studios?

Janus: "We're in Ólafur's room, mostly."

Ólafur: "We always start songs together, then sometimes I'll go in and mix things a bit on my own, or Janus might do a bit of editing. But in terms of songwriting, it's always us working together."

Janus: "That's where the Kiasmos sound comes from – us working together. Our tastes rub off on one another."

> ## That's where the Kiasmos sound comes from: us working together. Our tastes rub off on one another

Janus: "The snare from our new single *Blurred* is actually Olafur hitting the piano. He was playing the piano and I was like, 'We need a snare'. He didn't want to have to go find a snare so he was just like, 'Try sampling this' and whacked the piano."

Do you consciously try to make sure there's a blend of live and sequenced stuff in all your tracks then?

Ólafur: "The Juno-60 is on every song, pretty much. For pads and things like that."

Janus: "We did actually use the MS-10 for bass a lot on this latest EP. And the Korg PS3100 is on the newer stuff too."

Has that been the setup across all your releases?

Ólafur: "The Juno and MS-10 have always been there."

Space and spacial effects seem to be a big part of the Kiasmos sound. What are you using in that department?

Ólafur: "This is definitely my department..."

Janus: "Your expensive department [laughs]."

Ólafur: "I work with tape delays a lot. The Roland 501 Space Echo gets used a lot. Actually the 555, which is the rack version of the same thing. I have several of those as I always want to keep a stereo pair in my chain. Plus there always seems to be one broken and maybe one on the road, so I need at least four! You're lucky if you can have two and keep both working.

Do you change the setup much depending on the type of venue you're playing? For instance, is there much difference in the way you'll play in a concert hall compared to a festival?

Ólafur: "It's the same, really."

Janus: "We get to play a bit longer on these [concert hall] stages than at festivals, but it's the same show."

Ólafur: "I actually think it's really interesting to take the same show to these different places. Like when we did [London's] Royal Festival Hall, we took our festival show and put it in this classical concert hall and just made a rave in there. We don't want to have to try and make it 'nicer' for the nice building. They booked us, so they should know what they're getting into [laughs]."

There seems to always be at least one being serviced at any time. In fact, right now I only have one working.

"I also have an EMT 240 plate reverb and an EMT 246 digital reverb. Those few things can used quite a lot to create the ambient textures that run through our music."

Do you limit yourself to using just a couple of different reverbs on a track, or will you put everything in its own space?

Ólafur: "They're usually at least the same type of reverb. I don't tend to use many plugin reverbs in our productions – there's just one I use regularly, which is the EMT 250. I also have that as an outboard, but if you want to run lots of them at the same time with different settings, you'll have to use the plugin version. But on the whole, I don't like to mix too many different reverbs in one song, I just try to find with a sound that I like and just go with that in order to create some ambient textures."

Do you think your experience producing within soundtrack and classic spheres helps you bring something unique to the electronic music realm?

Ólafur: "I think so. My background in that world definitely feeds into this. Even though these are electronic songs and techno arrangements, I still try to keep things intricate and moving. I like to focus on how the elements play together, like you would with a chamber orchestra or something."

Is it fair to say you try and add a human – or at least out-of-the-box – element to almost every part of your tracks?

Ólafur: "Absolutely. There needs to be some errors in there; some mistakes."

Janus: "We usually try to keep the mistakes in."

Ólafur: "That's where some of the best things happen. You can cut things out and use them as something unexpected. That's part of why we love these machines, like the tapes echoes: we love them because they're not perfect. They're wobbly and slow down occasionally, and you'll get these slight pitch shifts. That's what makes them alive."

Janus: "We also used a lot of tape loops on the EP, which were imperfect loops."

Ólafur: "Oh yeah. I was doing this for a score actually, where I needed a lot of droning, ambient stuff. I got a tape machine and I just glued the ends of the tape together and ran it in this very large circle around my studio and back to the tape machine. That's how we created a lot of ambiences. A lot of the atmospheric, ambient stuff you hear in our tracks is created that way. These textures that are just there, in the mix. It's really wonderful because you can hear the splice in the tape, which you're not really supposed to be able to hear – if I was born in the '70s, maybe I'd know how to do that properly, but as it is you can hear these splice points, and I actually really like that."

Let's talk about your live sets a little – what are you using to translate the music on stage?

Janus: "It's fairly simple in a way, we just try to use the gear that we have as much as possible. So my

station is a laptop running Ableton, with lots of channels running the stems, drums, bass and bits of melody. Then there's one channel named Filter, which I'm sending out to Ólafur's Novation Bass Station, so he can filter various sounds in some songs. I'm running all of that through an RME Fireface UFX. Then I have a Kaoss Pad for making extra bits of loops and glitch stuff. I also have an Analog RYTM for extra hi-hats, kicks and snares in some songs. That's all going through a Nexus mixer."

Ólafur: "Over at my station I play synths, pads and some lead melodies over on the synths I have there, which are the Juno-60 and Bass Station II. I also launch the clips from my side."

Is there much room for improvisation within the live set?

Ólafur: "It's pretty regulated, but we've created specific moments where we can. Basically what we do is, before we take everything into Ableton, we go into the original sessions to make the stems and we edit them there, so that we have different edits of the songs for the live shows. At certain parts we create space in order to improvise; so we might have 16 bars which we can loop to play over the top of, but then we're ready to go in to the next scene.

"Because our music is so structured with the string arrangements and things, it's not particularly 'loopy'. So we can just work with loops all the time as a string arrangement will build and change constantly over two minutes. We have to actually play out that two-minute sequence; we can't make it longer or shorter because the strings are coming from the playback. In those moments it's very heavily boxed in, but away from where that kind of thing is happening, we can improvise a little."

Compared to previous projects, do you find it's harder to connect with the audience when you're behind a laptop or a pile of electronics?

Ólafur: "Not really. Obviously, as I'm sure you know, we're actually playing things up there, even though we might just be pressing buttons or launching loops. It's still a performance. But it is something we're aware of, and that's why we rely quite heavily on the visual aspect of the show, using laser and projections."

Janus: "We always tour with a light designer"

Ólafur: "We make sure we have a strong visual look to our shows, which is always there. So when you come see our shows, it's always going to have that same style." **FM**

WANT TO KNOW MORE?

Blurred is available now on Erased Tapes. For more news and live dates from Kiasmos visit: **www.kiasmos.is/**

2hp modules are small but deceptive!

These slender units prove that girth means nothing in the Eurorack world

Whether you want to freeze, comb, mix or switch between your audio, 2hp have you covered. As the name suggests, 2hp are a company who make 2hp modules – the smallest width, or 'horizontal pitch', a Eurorack module can be, according to them.

2hp provide a range of basic utilities and exciting modules that make you really wonder how they've crammed so much into them. We've all seen multiples and unity mixers in small formats, but these modules cover more than just the utilities front. Freeze, for example, freezes and loops an audio buffer; Tune offers quantisation with both modal and melodic transposition options; and Brst creates anything from bouncing balls to full on IDM beats. 2hp are certainly proving that big results can come from little packages.

2hp's range also takes in several simpler utility based devices. To some, these will seem less exciting, but just scratch that chin a little longer and you'll see how only 2hp of space can add some serious mojo – and often stand in for the missing features from other potentially "sexier" modules you already own. Does your favourite drum voice lack attenuators on its CV inputs? Synth voice lacking VCAs? Sequencer not got many musical quantization options? These little modules pack a punch, and we love them dotted around a system for both their utilitarian use, making the most of other modules and for the sheer quality in function and sound they cram into their space.

Half-pint heroes play a part in happy patching

Here's how to expand the functionality of other devices using 2hp's tall, narrow modules

01 >

Let's start with the humble little mixer. It's a simple four-channel mixer for audio and CV. We'll start with audio, so take a mix of your favourite waveforms and use the mixer to create new shapes for your favourite filter to chew on.

02 >

Sticking with the mixer, let's use it for CV. We'll modulate a filter with an envelope which, although effective, is simple and fairly obvious – so let's get creative by mixing envelopes, LFOs, sample and hold and audio rate modulation as a unique modulation source.

03 >

Beats at the ready, let's check out Freez. This module captures moments of audio and stutters the buffer with a size range from microseconds through to 3 seconds. There's also sample rate manipulation, making it great for a glitch-fest! Throw in some random gates and we're off.

04 >

Comb is an IIR peaking comb filter that has control over frequency, resonance (which can self oscillate) and dampening in the feedback path. Try using short bursts of noise into the input to excite the delay line creating audio rate 'Karplus-Strong'-style string sounds.

05 >

Tune is a multi-scale pitch quantiser which allows us to take CV sources and force them into quantised steps. Take your CV into one of eleven available scales. Try something exotic like the Egyptian Minor to bring new harmonic content to your music.

06 >

The Switch unit houses four inputs, an output, and a pot to control which one of those inputs is passed to the output signal. In the video, we've left one input empty, using it as a 'silence channel'. Finally, the connection next to the selector pot allows it to be controlled using CV, switching between the four sources from another signal.

François X

The leading light of Paris's bustling underground techno scene unleashes mesmeric new LP *Irregular Passion*, showcasing a darker, cinematic side to his talents. *Hamish Mackintosh* finds out more...

Francois X burst onto the underground house and techno scene with 2009's *Future Roots Vol 3* on the much respected Deeply Rooted label. Francois X's star continued to rise rapidly with a further two releases on Deeply Rooted before he co-founded his Dement3d imprint, which has served as a hub for his production work, collaborations and solo releases. Releases like 2013's excellent *Untitled EP* and the following year's *Suspended in a Stasis Field* have cemented Francois' reputation as a techno producer par excellence, while his remixes and in-demand DJ appearances have assured his standing as one of Paris (and beyond)'s keenest exponents of electronica.

Irregular Passion is something of a love-letter to the nightlife of clubs and the people and places we explore in the small hours. Francois X journeys into more cinematic realms than he has previously explored. Tracks like the brooding, atmospheric, *Blurry Lust*, *Under Your Spell* and the bass-driven juggernaut *Rachael* illustrate a producer keen to stretch his palette and follow his muse in new directions. In parts, *Irregular Passion* could be the perfect electronic soundtrack to some dystopian movie set in the future. Sonically, there's a lot of love and experimentation gone into its filmic grooves… whilst successfully keeping one eye discreetly on the dancefloor that's provided him his plaudits thus far. Literally just returned home from a successful promo trip to Japan, Francois X kindly gave *FM* access to his ergonomic Parisian studio space and, stoically fighting off jetlag, talked us through his methodology and the musical philosophy behind the making of *Irregular Passion*.

Irregular Passion is a darker, more cinematic journey than we initially suspected it might be; how long has the album taken you to put it together?

"To be honest, I couldn't say for certain because, at first, I wasn't aiming at doing an album. I was playing with music for a couple of months and ended up with two or three tracks. At that point it was more about diving into sounds – Not really making music but building up sounds and being inspired by the movies I was watching and the surroundings.

"Normally, I'm known for making techno and more straightforward tracks but, at the beginning of this album, it was more about spending nights making atmospheres, playing with sounds or building pads. After a couple of months of experiments, I thought maybe it would be cool to make some music that wasn't just aiming for the club and, from then, it maybe took a month to create the music then a little while longer to mix it and get the sound right. I spent 12-13 hours a day in the studio to do it all."

Is it important to take time off from making music to make a pool of sounds to use later?

"Good question because, if you knew how my production process works, you would possibly laugh. I'm not messy but… [laughs] I don't have a regular set process. For me, I believe in fate and sometimes luck so I let myself drift into making pads or whatever, but not necessarily to build a pool of things to use – it's more just to get ideas flowing. Sometimes I'll have a pad idea or maybe a drum structure and I end up not using either of them. It's more about finding a direction then deciding which idea to follow."

There are some familiar drum sounds on the album and some not so familiar. What's your beat-making process?

"For the new album I used classic stuff at the beginning like the 808 – not so much the 909 but 808 things – that I would filter down or resample. Sometimes I'd put a reverb on a drum then resample the reverb, and that gave me quite a liquidy sound. Some of the percussion sounds were done that way too, and that gives that nice, blurry, sound. So, it was mainly 808 along with some additional percussion from the Goldbaby libraries. So, it was really about resampling and resampling… sometimes the sounds are recognisable as 808 sounds, but sometimes I'd make them completely unrecognisable from the start."

There's a Roland TR-8 in your studio…did that get fired into use at any point?

"Sometimes. As I said, this album was mainly 808 samples and sometimes I sampled the structure of the drums and put some Goldbaby stuff on top. So, there's some TR-8, some 808 and the Goldbaby 808 and MPC60 samples."

Do you get swamped when you're looking for drum sounds and samples online?

"At the beginning, when I started to use those sample libraries, yes, totally. Maybe now I know what I want and my rule is to stick with one library – for example, the Goldbaby MPC60 library has 909 samples in it, and other stuff, but I now stick with one folder or library and those are the tools I use. No more digging in other libraries because, for sure, it's never-ending if you get into that!

"Something else I did on this album – when I had unfinished tracks and maybe if I was a bit stuck with them – sometimes new ideas would emerge and I would then have two track sketches. That's another reason I wanted to use similar sounding drums and have a more coherent atmosphere across the album."

Does having your own label, Dement3d, give you complete artistic freedom to make the music you want?

"It's funny because a few days ago I was chatting with a friend and told him that, in a way, I was lucky to have my own imprint and don't have to go through the process of having to please an A&R guy. On the other hand, I never really think about it as I don't really know what it is to have to create a release that fits for another label that has its own artistic direction and criteria. So, in one way, of course I'm freer."

Your studio setup is quite minimal. How did Softube Console 1 find its way into your workflow?

"It's minimal now but, when I started, I was like everyone else wanting that machine and that synth. At the end of the day you don't actually use a large percentage of it! You also don't master any one element of your studio setup, so I reached a point where I decided that I didn't need lots of synthesisers. I used to have the complete set of

the human and psychic feel of it. I wanted that physical interaction while at the same time not looking at my computer-screen. I discovered the Console 1, maybe through *Future Music* or *MusicRadar*, and I've had it for a year now and it's a real weapon for me. It's basically one channel of an SSL 4000, which you can upgrade to an SSL 9000XL. For me, it's really helpful and I can shape my music much more instinctively than using a mouse!"

"If I was to replace it I wouldn't buy a small mixer, it would have to be with one of the large consoles like a Neve. I have to have that feeling of touching the knobs and faders and tweaking the sound. The mouse remains quite an anti-musical device in the musical process, but nowadays it's the most common way for producers.

"Now I'm also looking at things like the Avid Remote with faders… I'm wanting a controller but with the feel of a big console."

I'm not that musical geek guy that's looking at every frequency; I'm more about the human and psychic feel of it

Elektron machines, Analog Rytm, Analog Four… and they were great but too complicated for my workflow – too many sub-menus and that took me away from a more instinctive way of working. I need to have the sounds quickly. One thing that's important for my music is EQ, and I was looking for something tactile and hands-on that could reproduce that feeling of tweaking the knobs on a big mixing console. I'm not that musical geek guy that's looking at every frequency; I'm more about

So, it's quickly become an integral part of your workflow then?

[laughs] "I could talk about it for hours…it's become a continuation of my body! It allows me to add a lot more colours to my music. To me, it's really important to have a sound in a track then maybe add character and life to it. When I was doing everything in the box and doing everything with a mouse, I was looking at the EQ curve on a screen, and in the end, the sound becomes really plastic.

What's everything going into?

"Ableton and that's it. I started doing music with it. Back in the day, a lot of my friends were using Logic or Pro Tools, but they felt a bit too mathematical for me! Actually, I did initially start out with Reason for a few months, but when I found Ableton I just used it. For me, the workflow is easy and quick. I know some people say the sound engine isn't the best but, for the moment, I think I can produce really good sounding stuff with it so I'm sticking with it."

Are you using Live Racks or any of the native effects in Live?

"I have loads of plugins but I do use a lot of the Live ones because they've improved many of them and

some were done in collaboration with Softube. I like the Auto Filter in Live, which now lets you switch and select differently modelled filters. Another one I use a lot is EQ 8, which I think is amazing. It's really transparent and precise. The Live compressor is great for sidechaining and the Gater is good too."

What about other plugins?

"A synth I use a lot is [Vember Audio's] Surge, which is brilliant. You have three oscillators and a shitload of waveforms – all the classic ones and others like the Waldorf-type waveforms. There's a bunch of sampled waveforms from guitars and cellos too. Everything can be assigned to everything else. It's an amazing synth and really easy to use.

"I use a lot of the brainworx plugins like Control V2 and the Hybrid V2 mastering EQ. They're super-effective on your mono/stereo frequencies, and I use these a lot to control the bottom in my mixes."

Reverbs and delays?

"I was using the Valhalla Room plugin all the time but nowadays I'm more using my Yamaha SPX90 but I sometimes combine them. In terms of plugins, I used a bit of the Arturia Mini Moog and I really use the AudioRealism ABL2, the 303 replica, which is amazing. TAL Audio's Bassline-101 is another one I love, and the TAL-Uno-62. In terms of effects plugins, I'm using Waves' Kramer Master Tape to add some tape saturation. For delays I use the Ensoniq DP/4 a lot just now. It sounds great but sometimes it needs EQing a lot!"

What do you use the Ableton Push 2 interface for when you're working?

"Sometimes with the Goldbaby sample libraries there are pre-built kits so I use Push 2 to feel like an MPC and maybe compose the beats. The controllers are good if you want to record a session as Push 2 lets you tweak your plugins' functions without assigning anything. With the first generation Push you had to assign everything and you had to really program the thing whereas now it's automatic and you can tweak, for example, the oscillator of your soft-synth quickly."

Anything you can see adding to your studio in the near future?

"I was in Japan a few days ago. I was invited to the Roland showroom and tried the Boutique D-05 version of their old D50 synth. I'm going to get one as soon as get back to Paris – I'm going to the music store to get one. One other thing I'm after is a Cartec EQP-1A, which is a clone of the Pultec EQ. So, I may replace the DJR100, which is a rotary mixer but I'm using it more as a pre-amp. I'm starting to build a DJ booth in the studio, so maybe I'll take it back to its primary function and replace it with the Cartec. I was using a lot of the Softube plugins to reproduce the Pultec EQ sound. Those are the only things I want as I'm not wanting a wall full of modular synths because I'd get lost!" FM

WANT TO KNOW MORE?

Irregular Passion is out now. Check out **www.francois-x.com** for more info and tour dates

Is that Korg Minilogue all over the new album?

"I was using the Elektron Analog 4 for a while, and it was great, but sometimes, in a way, it led me to lose the basic idea that I was aiming for. By the time I went through the sub-menu to change the waveform or modify the envelope I was losing the idea. The Minilogue is the perfect synth for me because the controls are really big and there aren't too many things to do to get the sound. There's the oscillator section, the filter section, modulation section, and that's it. When you tweak the buttons, you find good sounds. You can do bass, leads and pads with it and the arpeggiator is amazing. Even with mistakes you can come up with really good sequences. A lot of the pads and bass on *Irregular Passion* are done with the Minilogue. It's inexpensive for such a powerful synth and I like that the sound is a little 'gritty'."

Creative delay

Step beyond 'standard' echo treatments and see how delay can be used in more creative contexts

VIDEO ON FILESILO

Ask any mix engineer which effects he or she is most reliant upon and it won't be long before delay appears on the list of must-have treatments. Alongside EQ, compression and reverb, delay is an effect most productions just can't live without. This is partly because it can offer such a wide range of possible treatments. Add a ping-pong delay to a pad sound, strip out its bottom end and you'll end up with something akin to stereo width enhancement; or introduce multiple delays and offset their pitches to can create quasi-harmonies from echoes alone. If you want to see this particular example in action, it's the subject of this month's video.

What's clear, then, is that delay can offer much more than the kinds of standard echo treatments it's most commonly associated with – and it's exactly the creative end of delay design which we're focusing on this month, by including delay treatments in musical contexts where a little more consideration or enhancement with extra effects (in a chain or series of inter-dependent processes) can make your productions more unique. In our six-step walkthrough, we've looked to create an atmospheric texture from multiple, cascading delay effects, where each new delay treatment is triggered from the previous one. With careful manipulation of other parameters, such as pitch and tone

control, even the simplest sound can become the foundation for something rich, layered and unique.

Meanwhile, in our three-step tutorial, we've taken an approach normally associated with synth programming and applied it to an echo treatment to produce a unique spin. But these examples are the tip of the creative iceberg – once you've tried our ideas out, why not solo your auxiliary treatments and capture them as audio files which you can then bring into your mixes for further treatment? You could re-sample them, timestretch them, reverse them, or treat them to new chains of effects. Or you could import those audio files into your sampler to create sustained loops, or trigger shorter stretches of your delay textures alongside drum sounds.

Remember too that reverb effects are simply thousands of discrete delay taps, offset by different times, all reaching you within a few seconds. So with some ingenuity, you could create reverb-like effects by multi-layering delays with anything from microscopic to more generous delay times. Indeed, you'll sometimes find that delay plugins offer a diffusion algorithm (we've used the one in NI's Replika XT in our 6-step walkthrough). Delay is just one of those treatments that, with some careful thought and a creative mind, can be one of the most chameleon-like effects you can imagine. Let our approaches be your guide before you're ready to cut loose on your own.

QUICK TIPS

1 Look beyond the 'standard' delay plugin parameters. Yes, feedback level, dry/wet mix and the rate of your delay taps are important considerations, but the most creative parameters are usually the others; explore modulation options (envelopes and LFOs), delay types and effects-within-effects options particularly.

2 Know the difference between stereo and ping-pong delays. Usually, stereo delays let you pick two different delay times which play at once, whereas ping-pong delays consecutively bounce each delay tap from one side of the stereo field to the other.

3 You'll see that in many of our examples, we've picked key delay parameters to automate as our mix evolves. Whether you want to push and pull feedback levels, pitch offsets or any other parameter, keeping your delay sounds evolving keeps them lively in your listeners' ears.

FMCHOICE

Six of the best delays

Native Instruments Replika XT | £89
Offers several algorithms for everything from clinical digital delays to warm analogue models. The Diffusion algorithm pushes into reverb territory.

Waves H-Delay | $49
At first glance, this is a 'does what it says on the tin' plugin, but analogue modeling, LoFi and modulation options make this a go-to choice for both 'standard' and creative delays.

UAD Korg SDD-3000 | £99
This delay offers the trademark sound of U2's The Edge, giving it its place in the delay hall of fame. The good news is that there's plenty here for creators of electronic music too.

SoundToys EchoBoy | $199
A true chameleon and a creative producer's dream. Offering a dizzying array of parameters, Echoboy helps you shape and craft echoes in seemingly infinite ways.

UAD EP-34 Tape Echo | £149
If wobbly tape delays are your thing, look no further. With the Recording dial capable of pushing extra input signal 'back into' the virtual tape, you can create regenerating effects.

Melda MDelayMB | €49
This delay allows frequency-specific echo treatments independently across six bands. If that sounds fun, MeldaProduction have made your dreams come true with this one.

Adding delayed detune to synth leads

It's a well-known fact that adding detune to synth parts can give them greater power in the mix. But what about adding detune to their effects?

There are lots of tricks you can use to create huge-sounding, impactful synth lines. Stacking oscillators is one way, so that the tonal footprint of your sound becomes rich and saturated in harmonic content. Those same oscillators become even more in-your-face when the fundamental frequency of each one is offset, so that the root note of each oscillator is slightly out of tune. This is called detune, and another way of achieving a similar result is to route an LFO to the Oscillator stage of your synthesiser so that its pitch rises and falls. So far, so simple. But if you're looking for a unique twist on this approach and the synth lead line you've programmed is appropriate, applying a similar technique to an echo treatment can work well.

> Our track contains Bass, Beats and some Granular, delayed Percussion. To this, we add a single synth lead note from Massive. As an Insert, we use Logic's Autofilter to create a tonal sweep from bright to dull and back again. The lead line has power but a short duration.

> We want the synth note to last longer, which we make happen with delay. We set Waves H-Delay up on Auxiliary 1 and make the delay Time a 1/4 note. We set a long Feedback Time so that we get many repeats and turn up the plugin's Output level.
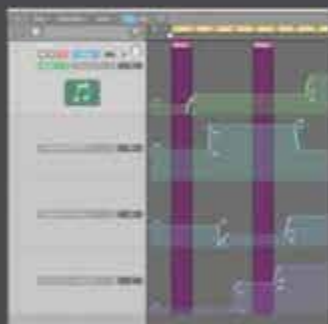
> We introduce pitch wobble via the Modulation parameters. We set Rate at 0.48Hz, and add a little Depth to create a pleasingly Detuned sound. This dial is set at just 6%. With the long Feedback Time this creates undulating pitch movement through the delay tail.

Cascading delays to create atmospheric layers

Creating multiple, interdependent delays can turn a single source into a lengthy wash of sound

01 >

We're starting with a basic arrangement which features a single note from NI's Kontour instrument, hosted within Reaktor 6, played every four bars. Automation data used is to change the tone of this sound, whilst there's a reverb treatment from UVI's Sparkverb on the Insert.

02 >

We start by setting up a first delay on Auxiliary 1. This features dual delays – one using dotted quarter-notes and one straight quarter-notes. We're using NI's Replika XT with its Analog delay type activated. We're using the internal filter too, to roll off a little high end.

03 >

We set up a second Auxiliary, triggered from the first one, and put Soundtoys' EchoBoy on this channel with its Ambients Echoes preset slightly amended. We set the left delay at a 1/1 note (a bar), whilst the right channel is set to a 1/2 note. This produces a washy, reverb-like sound.

04 >

We also trigger another new auxiliary from the Replika XT delays. Here we use Logic's Delay Designer, which lets us create a pitch offset for each delay tap. We automate these so that after each trigger note, the cluster of pitches subtly changes.

05 >

We want to make more of these pitched delay taps, so we send them to another new auxiliary where we set up Waves' H-Delay with a little pitch modulation wobble. We use a dotted eighth-note in PingPong mode, with generous Feedback levels.

06 >

We route all of our treatments to another new auxiliary, where a second Replika XT effect is set up with the Diffusion algorithm. We automate the Size parameter, which creates pitch ramps which bend gently up and down. We set the volume of the auxiliary returns to taste.

FutureMusic Platinum Award

DSI Prophet Rev2
16-Voice £1,914

Launched in 2007, the Prophet 08 returns with a serious refresh and a new name. **Dan 'JD73' Goldman** gets layering!

CONTACT **WHO:** Dave Smith Instruments **TEL:** (415) 830-6393 **WEB:** www.davesmithinstruments.com **KEY FEATURES** 5-octave keybed with velocity/aftertouch. 2-part multitimbral with 8 voices/separate outputs per-layer. 2 DCOs per-voice with sub oscillator. Extended slop parameter range. Dual-mode Curtis filter. 23 mod sources/53 destinations/4 LFOs. MIDI-syncable arp/sequencer with 4-track gated mode and 64-step poly mode. Digital FX engine per-layer

Back in 2007 when the Prophet 08 was released, it really reinvigorated the analogue poly market as it offered a new level of features and sound for a reasonable price. Fast-forward to 2017 and DSI's ever-popular synth has just had a long-overdue refresh to bring it up to speed! Time to check it out…

The sequel isn't called the Prophet 08 Mk2 as expected – it's the Prophet Rev2. The Rev2 has the now-standardised DSI family look, with rubberised silver-collared knobs, red-backlit switches and chunky wooden end cheeks. The 08's front panel Lexan panel sticker has made way for direct screen-printed graphics (like the Prophet 6) which adds a further air of class and quality to the design. In fact, everything feels more upmarket compared to the 08, including the knobs, switches and the keybed. Speaking of which, this is a huge improvement over the more clacky 08 keybed and it's very similar to the keybed in the Prophet 6 and OB-6 (ie one of the nicest synth actions around). Plus there's an extra octave which makes a big difference to playability and the extra range really comes in handy, especially when splitting the keyboard.

The Rev2 is available in three versions – the 8-voice (the nearest equivalent to the outgoing Prophet 08 and costs £1,435); the 16-voice (this review unit) at £1,914; and the 8- and 16-voice desktop versions at £1,243 and £1,722 respectively. You can also upgrade the 8-voice models to 16-voice models down the line, with the upgrade board currently costing £573.60.

The 08's front panel has received a complete makeover with the most noticeable difference being that the wide, two-line red digit display has made way for a white-on-black square OLED. This relays patch names, modes and parameters to the user clearly and concisely, though some of the writing can appear small at times. A couple of minor criticisms – firstly if you're playing with your left hand and want to tweak parameters via the Parameter and Value knobs using

your right, your hand often obscures the screen. Similarly, if you want to change patches and banks with your left while playing with your right. Also when programming and tweaking settings I often accidently turned the Patch and/or Bank knobs rather than the Parameter and Value knobs which resulted in me completely losing my in-progress patch; perhaps a 'long press' mode could be implemented for the Misc parameters button which could disable the program/bank knobs (when programming). Plus, I would have included the direct bank and patch buttons from the Prophet 6; these would have enabled much quicker patch access/recall and would have allowed you to have ten patches in front of you at once.

Moving on, while the wheels being placed above the keyboard still isn't the most natural place to have them, this does keep the overall length down, which means less bulk to carry. Next to the wheels is the unison button, which places up to 16 DCOs

in a subtle or monstrous stack! Again, I'd like a long press mode for unison to set the number of voices/chord mode in combination with the value dial, as currently this involves menu diving. Also, it's counter-intuitive that you have to menu dive to set multi/legato triggering.

Minor beefs aside, the rest of the new panel is more logically laid out than the 08 with all three envelopes placed together on the right (filter, amp, auxiliary). The comprehensive modulation section (which includes

four LFOs and eight assignable mod slots) is also much easier to set up and all modulation resides on the left of the panel; simply hold Source and turn any dial to set mod source, and hold Destination and turn any dial to set destination. Easy! And to set up velocity or pressure as a source, just tap or deep-press any key. One caveat – I loved how on the P12 you could press and hold LFO1's button and simultaneously edit all four LFOs; you can't do that here but it could be a future firmware improvement.

It's the same distinctive-sounding engine as the Prophet 08 with some indispensable tweaks

FX, SEQUENCER AND ARPEGGIATOR

The biggest upgrade on the Rev2 is the addition of the FX engine, which allows you to take the core sound a whole lot further and houses several digital effects including chorus, phasers, flangers, reverb, digital and BBD delay emulations, distortion, ring mod and a resonant high-pass filter. These effects all sound high-quality and are musically voiced to complement the DCO sound engine – each effect also has two modulatable parameters and a modulatable mix parameter (which greatly extends the usefulness of the effects and the Rev2's general sonic palette). However, you can't use more than one effect per-layer (as on the P6). Also, the digital delay doesn't sound as wide as on the P6 (which I'm hoping can be tweaked in a firmware update). The 64-step poly-sequencer (with transpose) is a great sketch pad that can help form the backbone of whole tunes, live or in the studio, while the gated sequencer is great for complex step-based modulation sequences and has four tracks to play with. The arpeggiator has several modes including random and assign (though no poly mode) and like the sequencer, it syncs to MIDI-clock.

Now the sound engine. Well, it's the same distinctive-sounding engine as the Prophet 08 with some indispensable tweaks! To recap – at its heart is a two DCO per-voice engine with 4- or 2-pole mode Curtis low-pass filter (as found in the Mopho series and Tempest). I was hoping for an analogue high-pass filter this time (like the Tempest) but that's not included; however, there's a decent resonant digital high-pass in the effects section and this can be modulated (along with the other FX) which is huge news! Another new (and very welcome) inclusion is the sub oscillator which really helps bass sound creation and can thicken leads and pads too. Most of my reservations regarding the P08 (ie no FX, no sub osc, difficult to set up modulation routings, to name a few) have been addressed and making sounds is a whole lot more pleasurable – the workflow is greatly improved and the Rev2 is generally more intuitive.

Sonically, it's no surprise the Rev2 sounds much like a P08 at its core but then it seems to sound a little warmer and more soulful overall (the 08's signal path seemed to clip more easily). You can also go much deeper with the addition of the sub osc, extra voices (if you have the 16-voice) and the modulatable effects; it's a big upgrade and sonically it's much more appealing. The reservations I had regarding the P08's sound (ie that it's a little brash and sterile-sounding at times, and how the filter doesn't do thick, low filtered pads particularly well due to the lower midrange bump the resonance brings out) are still there, but rather than be too hung up about these, these are characteristics of this synth that are here to stay, so let's embrace them!

Personally, I find the Rev2 to be much more versatile compared to the 08 and I can see myself adding one to my live rig, particularly as it's one of the only current analogue polys around with 16 voices and dual layers, extensive modulation facilities that are a doddle to set up, plus a very playable 5-octave splittable keyboard and dual 8-voice stack mode which sounds marvellous! Talking of splits, a little split reference onscreen would be handy to avoid embarrassing slips onto the wrong side of the split during performance!

Once you add in the arpeggiator, the 64-step poly-sequencer (taken from the Prophet 6/OB-6), the fact

MODULATION: The Rev2 has double the number of modulation slots compared to the P08. There are 23 sources/53 destinations.

DCOs: Onboard are two DCOs per-voice with four modulatable wave-shapes per-oscillator and a sub oscillator for low-end thickness.

CONNECTIVITY: The Rev2 includes USB for MIDI, two sets of stereo outputs for each layer in a split or stack, a sequencer jack, and more.

SPLITS/LAYERS: The 16-voice Rev2 has two separate 8-voice layers. These can operate as a stack or as a split. Each layer has its own effects engine.

that the sequencer also does gated mode (like the 08) plus the fully bypassable effects (also derived from the P6/OB-6), the whole package is very appealing. I really think it's worth the extra outlay to grab the 16-voice version as this gives you a lot of power when splitting and layering and for making huge chords or unison stacks.

As mentioned, the Rev2 has a distinctive edgy character but at the same time it can do beautiful atmospherics now, when using the new effects alongside the per-oscillator shape mod and the gated sequencer for effect modulation. Also, one of my favourite features, 'pan spread', is still onboard and this spreads all 16 voices out across the

stereo spectrum which makes it sound huge. Importantly, I can see DSI shifting a load of these as the Rev2 will appeal to pop, electronic, R&B and soul acts who want solid staple analogue sounds, but also to sound designers too, who want real depth that they can explore.

Granted, if you want thick or silky VCO tone like the P6/OB-6, then only the P6/OB-6 will do. However, if you want precise, upfront, modern and evolving DCO-analogue sounds and atmospherics with a whole versatile bag of mod options, splits and layers, then Rev2 is very appealing and inspiring, plus right now it's the only option (bar Alesis' discontinued Andromeda) for a 16-voice

self-contained multitimbral poly. Basically, it's everything the P08 was but much better! **FM**

FM VERDICT

9.2

A brilliant synth with lots of hands-on control and a well-defined, powerful, upfront sound. The P08 improved – and then some!

Korg Grandstage 88

£2,349

Korg's latest stage piano pairs premium Kronos sounds with an intuitive, gig-ready interface. **Dan 'JD73' Goldman** inspects

CONTACT **WHO:** Korg **TEL:** 01908 304600 **WEB:** www.korg.com **KEY FEATURES** **I/O:** 7 Kronos engines. 500 sounds. 73/88-note RH3 keybeds. Pitch/mod wheels, three pedal inputs. ensemble/keyboard sections (bi-timbral) with 16 categories and dedicated OLED screens/level controls. FX section with reverb/delay plus onboard chorus, phaser, amp-drive, compressor, pan/trem, rotary, filter. **DIMENSIONS:** (73-note) 1099 x 359 x 140mm. **WEIGHT:** 17kg

THE PROS & CONS

+

Very intuitive, well built and portable

Seven versatile Kronos sound engines cover a wide sonic territory!

Flat top gives a space for tablets/laptops/small controllers

Pedal noise included on pianos

–

Cost doesn't include a case

No organ drawbars; no ADSR controls; no valve/Nutube (like the SV-1/Continental)

RH3 action is fairly heavy and can feel tiring. No user sample loading. No dedicated front panel controls for filter or FX rate

A nice touch is the ability to swap the sounds on the left and right of the split

Korg's Grandstage is their latest stage piano, sitting alongside their well-respected SV-1 and recently launched Vox Continental. The Grandstage features seven of the latest Kronos sound engines, including the SGX-2 piano engine, EP-1 electric piano engine, AL-1 analogue modelling engine, HD-1 PCM synth engine, plus CX-3, Vox and Compact (Farfisa) engines – plenty to cover a wide range of bread and butter sounds and more on top of that!

Firstly, let's look at the form-factor. The Japanese-built Grandstage comes in two versions (73- and 88-note weighted versions), and it looks very sleek with its brushed black metal control panel, boutique grey woodgrain top/rear panel, and black sculpted plastic side panels with silver trim. The main control panel features red backlit switches and several segmented LED dials for checking levels at a glance on stage, plus there's also a huge multi-colour (and velocity triggerable!) backlit Korg logo on the rear. Build quality is excellent throughout, though black ash endcheeks would have really completed the premium feel better than the included flimsy plastic ones!

Korg's tried and tested graduated RH3 weighted keybed is featured on both models. The action feels generally well-balanced for piano playing and works OK for the onboard synth, clav and organ sounds too – though bear in mind playing synth sounds from a weighted keybed is always going to be a compromise, no matter how great the weight action! One thing that would have been great here is a high trigger point (like the Nord Stage models) so that the synth and clav sounds trigger with a more synth-like action. This would have made it feel lighter and faster for playing those patches.

Notably, the Grandstage is bi-timbral, so each of the two main sound sections (Ensemble and Keyboards) can be addressed on its own MIDI Channel – great if you want to address synth sounds from a separate lightweight controller keyboard. Consequently, the two sound sections can be layered or split easily, and a nice touch is the ability to swap the sounds on the left and right of the split with one button.

Now the sound shaping controls: first off, we have pitch and mod wheels. The mod wheel function can be addressed via a connected pedal, whilst it also acts as a volume swell (when using organ sounds) and as a trem/pan speed control on the electric pianos; the pitch wheel also becomes the rotary speed controller for organ sounds. Underneath the wheels are Korg's familiar SW1/2 switches, which

Nord Piano 3
£2099

Featuring the Nord Triple-Sensor keybed, Nord Triple-Pedal with damper, pedal noise and string resonance, plus split and layer capability, powerful FX and user sample import, the NP3 is a killer machine!

nordkeyboards.com

Roland RD-2000
£2189

Roland's latest flagship stage piano includes their latest V-Piano and SuperNatural sound engines, along with a great 88-note keybed and comprehensive real-time front panel control. Another must-check-out!

www.roland.com

Yamaha CP4
£1699

The CP4 features a great-feeling weighted wooden keybed, plus authentic acoustic and electric pianos, along with a good complement of other synth/organ sounds and FX.

uk.yamaha.com

KEYBED The graduated hammer action RH3 keybed feels well-balanced and works particularly well with the acoustic and electric pianos.

DESIGN Classy touches include wood grain effect on the top and rear of the main panel, a multicolour Korg logo at the rear, plus a chrome stand.

INTUITIVE The clean, elegant front panel layout allows quick selection of sounds, super-quick layering, splitting, effecting and tweaking.

KRONOS SOUNDS As the Grandstage features Seven of the flagship Kronos engines, you know you're getting top-notch sounds as part of the deal.

add extra control over your sounds, such as percussion for organs and chorus or autopan for electric pianos. Next comes a Dynamics dial (as on the new Vox Continental), controlling how the sound engines respond to your playing style. This is followed by a three-band EQ – although there's no global ADSR controls onboard, you can tweak release time in the menus. It would be great if a full ADSR menu could be added in an update.

Moving onto the Ensemble section, like the Keyboards section it has its own classy white-on-black OLED screen for displaying program number, name and edit parameters. You simply choose your category using the dial

(lead, bass, synth, strings etc) and then select from the considerable number of variations. You can also go in deeper by pressing the Edit button (per-section) and then tweak parameters specific to that category.

Whilst editing isn't massively deep, there's enough onboard to personalise your sounds nicely. Notably, each section's final category also contains all the sounds from the other main section, so you can have piano, clav or organ running from the Ensemble section and synths, strings or leads from the Keyboards section. It's surprisingly flexible and very intuitive and quick to work with, which is especially handy on stage. To the

right of each section's screen is a level control (which can be tweaked on-the-fly), and in the middle of the panel are eight banks of eight favourites, containing some great preset starting points that can be overwritten. Importantly, the Grandstage also features seamless transitions, so sounds don't cut off when moving between them.

Sound-wise, the Grandstage is very impressive and versatile and (unsurprisingly) sounds every bit as great as the Kronos. The synth sounds are warm and present, pianos lush and realistic, electric pianos authentic and characterful, the FX musical and complimentary, and the range of sounds on offer will cover just about everything you could want in a stage piano/synth. The Grandstage certainly impresses from start to finish. If you're after a superb-sounding/ versatile stage piano, then the Grandstage is a class act! **FM**

CONNECTIVITY AND ADDED EXTRAS

Stage pianos need a decent amount of connectivity, and the Grandstage has plenty! There's a handy front-mounted headphone socket, and at the rear there's damper, switch and expression pedal inputs (assignable to volume, wah etc) along with MIDI in/out (DIN), plus USB MIDI and USB for data storage. Audio output-wise, there's standard L and R jack outputs, plus a separate set of balanced XLR outputs too. Also, there's a bespoke chrome stand, damper pedal and music rest included. Finally, though they're not accessible directly from the front panel, there's authentic chorus, phaser, amp-drive, compressor and rotary effects onboard in the menus, plus four types of reverb and four types of delay.

FM VERDICT

8.9

A classy sounding (and looking) stage piano offering a range of superb Kronos sounds, with intuitive operation and solid build. A very impressive instrument

Blue Cat Audio Late Replies €129

This delay lets you add whole plugins into its feedback loop for cascading, evolving echoes. **James Russell** gets in the loop

CONTACT WHO: Blue Cat Audio **WEB:** www.bluecataudio.com **KEY FEATURES** Delay plugin (AU/VST/VST3/AAX, PC & Mac) featuring an eight-tap design and two feedback loops. Individual taps, feedback loops and input/output stages can host four processors each – choose from 25 built-in effects or load your own VST/VST3/AU effects.

THE PROS & CONS

+

You can insert whole plugins into delay taps or feedback loops

It can load another instance of itself in itself!

Interface size grows with your patch's complexity

—

Interface size can become too large for smaller screens

Adjusting the delay times for the 'replies' isn't very intuitive

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You can even load another copy of Late Replies within Late Replies

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Every delay has a feedback control, letting you send the delayed output signal back into the input for 'repeats of repeats'. If you can – by hook or by crook – add an effect into the feedback loop, every echo gets an extra dose of it with each pass. Pitchshifted delays get higher or lower with each repeat; distorted delays get trashier and trashier each echo, and so on. It's a great creative effect, but few hosts will let you set it up.

Late Replies aims to make obstacles to this a thing of the past, giving you two delay lines and 25 built-in effects to insert into the feedback loop. But why stop there? Developer Blue Cat Audio have a history creating plugins that host other plugins, and they've imbued Late Replies with this ability too.

While feedback loop effects might be the headline, there's plenty more to discover here. The plugin uses a 'tap' method to build its delays, letting you select up to eight 'Replies' (repeats) and time each one visually on a grid. Each Reply has four slots for effects, meaning that you can imbue each repeat with its own treatment – varying filter settings, modulation FX and loads more. Used like this, Late Replies almost covers the territory of a sequencer. Preconfigured setups of taps can be selected as presets, and you can save your own.

After the Replies comes the all-important Feedback Loops section – two separate feedback chains, each with variable Feedback Level and Pan, crossfeed and crosstalk. There's four insert slots in each for loading effects.

The 25 in-built devices take in shifters, modulators, dynamics, EQ and filtering, utilies... even other delays – and get this: you can even load another copy of Late Replies within Late Replies! But the sky's the limit when you can load any plugin you choose into any tap or into the two feedback loops.

Late Replies successfully handles both VST and AU effects – even at the same time. I had Audio Units running in the now-VST-only Reason, for example. The plugin hosting is great, but after some time with the Late Replies, it becomes clear that that's not necessarily how you'd use it most – sure, digging around in your plugin collection to create unique and sometimes insane effects is a brilliant feeling, but Late Replies offers more than enough with its own onboard processors. I can see myself reaching

for a particular VST or AU effect when I have a specific result in mind, but for 80% of uses, I'll be more than happy to 'go native', as it were.

There's a Panic Button and limiters onboard, plus another four effects slots on the input and four on the output, plus a sidechain section for automated ducking of the delay signal.

Late Replies' interface is generally trusty but could be better-honed, but this is the only gripe with this otherwise highly inventive, creative and – crucially – stable delay workbench. **FM**

FM VERDICT

9.1

This plugin-hosting delay effect is as cool and fun to use as you'd expect, taking your echoes to experimental new heights

Polyend Seq Step Sequencer £1,099

Bruce Aisher drags himself away from the mouse, to take a standalone sequencing journey with Polyend's new hardware

CONTACT WHO: Polyend WEB: polyend.com **KEY FEATURES** 8 tracks with 32 steps each, 256 pattern memory, On-the-fly track parameter Randomisation, Live Sequence recording with external device via MIDI, Step parameters: Note, Velocity, Length, Modulation, Roll, Independent track play mode (Normal, Reversed, Pingpong, Random), Track parameters: Length, Velocity, MIDI Channel, MIDI out, Pattern chaining

THE PROS & CONS

+

Simple and elegant design that strips the user interface down to easy to access basics

Independent track length and multiple playback modes make programming complex evolving patterns easy to achieve

Updatable firmware allows new features to be added

–

Connectivity is restricted to MIDI and USB. In the absence of CV/Gate, analogue modular freaks will need to resort to Polyend's Poly Eurorack unit or something similar

There's no hiding from the cost of this sequencer

The ability to easily tweak step lengths allows more interesting and fluid patterns

E schewing any references to fashionable analogousness, the Polyend Seq is an 8-track MIDI sequencer, and a rather beautiful one at that. Made of painted black aluminium and oak, and laden with over 270 backlight momentary switches, six continuous knobs and an OLED screen, this is an engaging box from the start.

Each of the monophonic tracks has 32 available steps. Each step can

be turned off or on via the front panel buttons, which are pressed to move through multiple onscreen parameters. Holding a button and adjusting one of the parameter knobs allows you to adjust pitch, velocity, modulation amount and length. Additionally, steps can be set to roll notes in one of seven time division increments or subtly allowed to rush or drag against the beat using the Nudge parameter.

The parameter knobs perform additional features when pressing the numbered track buttons. In Note

mode you get root note, track transpose, MIDI channel and output. The Velocity page configures the MIDI velocity range and MIDI CC number for modulation messages. The Move knob slides all of a track's notes forwards or backwards in full steps, with smaller shifts made using the Nudge parameter. Each track can utilise a different track length (up to 32 steps) and play forwards, backwards, both ('ping pong') and completely random.

There are 256 storage slots for complete patterns (and the ability to link patterns), with additional buttons on the far left of the panel for selecting or duplicating them, quick clearing of randomising tracks and taking care of playback/record duties.

Seq still allows real-time recording via MIDI or USB. Although each track is monophonic, selecting more than

one track when recording allocates any polyphonic playing between the available tracks (ie a four-note chord will need four tracks). The ability to then tweak the tracks individually makes for some very interesting experimentation possibilities. Incoming MIDI notes can also be used transpose tracks in real time by holding a track button when in playback mode.

I tested Seq with my Vermona PERfourMER MkII using both the MIDI and CV/Gate connectivity (via the Polyend Poly) and both worked extremely well. Initially I created a simple analogue drum rhythm using three tracks to trigger separate synth engines. The grid for these is largely similar to the classic XOX programming methodology, though the ease of adding and customising individual note rolls ups the ante

BUTTONS The myriad buttons are all backlit momentary switches and the primary way to access tracks, steps and core functions.

KNOBS The six parameter edit knobs connect to switchable rotary encoders. After pressing a step/track button these adjust one of four parameters.

DISPLAY A monochrome OLED display is used for visual feedback when editing steps and tweaking track parameters.

CONNECTIVITY: Each track's output can be routed to either of the two MIDI outs or to an external sequencer via USB.

here. A fourth track was used to add simple monophonic bassline. The ability to easily tweak step lengths made for more interesting and fluid patterns – something that is not so easy to achieve using a basic analogue step sequencer.

It would have been useful to have included an undo button, and the ability to select from different scales (something that makes Arturia's BeatStep Pro more musically intuitive). Also, although going against the clean design aesthetic, I wonder if coloured LEDs might have

aided programming and visual feedback (of which there is little, other than the off/on status of a step).

The final potential issue is one that may put off some users in the modular and/or analogue communities, and one that stems from the MIDI protocol itself. MIDI is a serial communication system, and as such becomes less tight in the timing department the more notes that are played. Seq helpfully includes two separate MIDI Outs as well as USB, but CV/Gate enthusiasts may balk.

The Polyend Seq is an undoubtedly lovely looking piece of kit, and one that has been designed and built with great care. While writing this review I was informed that Polyend will be releasing a major firmware update for Seq which will add scales, chords (per step), different time signatures for each track and more randomisation options as well as some workflow optimisation. Many of these were on my list of functional shortfalls, so it's great to see an active improvement system in place.

Seq provides an engaging, and tactile, solution to a specific sequencing need in an attractive package. However, there is no shying away from the cost of buying into the Polyend universe. £1,099 is not an insignificant amount of money to spend on a relatively simple device that could feasibly be replicated in iPad or other computer-based form. But this would be missing the point of a box such as this. If your pockets can take the strain, then the Seq is well worth a look. **FM**

POLYEND POLY EURORACK

Poly is an 8-channel MIDI to CV converter. It converts MIDI data received via the USB, USB Host and MIDI DIN ports (or all at once) into switched and continuous voltage outputs. Incoming MIDI Notes are mapped to the Gate and Pitch (V/oct) ports. MIDI Velocity and MIDI CC (CC number set on the back panel) go to the Velocity and Modulation outs respectively. The default mode allocates each of the eight 'voice' channels to its own incoming MIDI channel, but Poly includes modes for allocating incoming polyphonic playing between the voices.

Poly has more outputs than many other MIDI to CV conversion boxes, and is an ideal partner to Seq if you need to interface to a wider range of gear.

FM VERDICT

8.0

Polyend's Seq is a great sequencer that should see an improved feature set in the coming update. It isn't cheap though.

Freeware Instruments 2017

As Christmas draws nearer we're all looking to save a few quid. The solution for musicians? Download one of this year's best gratis synths and virtual environments

FM|MUST HAVE!

Full Bucket Music FB-3300

A faithful PC/Mac emulation of the rare Korg PS-3300 polyphonic analogue synth, Full Bucket Audio's FB-3300 (PC/Mac, VST/AU) punches well above its weight for a free instrument. Just like the original hardware synth it's based on, FB-3300 consists of three independent 'blocks' that run in parallel. Each block houses an oscillator (select from triangle, saw, square and pulse shapes, and FM is also available), a two-pole resonant low-pass filter, amp envelope, dual mod generators (LFOs), controls for micro-tuning, and a resonator (essentially a trio of bandpass filters). These blocks feed into the mixer section, then to a VCA for amplitude shaping.

The sounds you can generate with FB-3300 are extremely versatile: FM, AM, ring mod and cross mod effects are all possible. And just like the original, the architecture is semimodular, meaning you can freely patch the modules for all manner of tweakable timbres.

Overall, FB-3300 is a must-download for retro fanatics, modular geeks and lovers of classic synth sounds alike.

www.fullbucket.de

VERDICT 8.9

Klevgrand SyndtSphere

This slimmed-down free version of the Swedish developers' Syndt isn't the deepest synth on our list, but interesting nonetheless. In a nutshell, the synth's 70 presets are plotted around the interface, and you rotate to "surf" between them and create unique sonic concoctions. Combine this with a stereo ping-pong delay and other controls, and you've got something that can spit out inspiring sounds that your wallet will thank you for. Plus, it's available in AUv3 format for iOS, as well as PC/Mac VST/AU.

VERDICT 7.1

NuSofting Noisetar

If you like to synthesize sounds, you already know how powerful noise can be – and here's a free synth plugin based purely on the white stuff. With 10-voice polyphony, it generates sound with its two noise-based oscillators, and tonal effects can be generated with its MIDI-tuned bandpass filter. Elsewhere, there's a dual low- and high-pass filter, chorusing reverb, stereo enhancer and more. Although something of a one-trick pony, we're sure you'll have fun designing sweeps, FX, booms, hi-hats and other noise-based sounds.

VERDICT 8.3

Christopher Hart HISE

If you've ever wanted to craft Kontakt-style instruments for free, then this could be the freebie for you. This open-source platform from Christoph Hart (PC/Mac, VST/AU/

standalone) allows you to create your very own sample-based instruments that can be exported in VST format and distributed (although rules apply if it's for commercial purposes). Its simple drag-and-drop editor lets you build custom interfaces – complete with filters, envelopes, LFOs and more – taking the headaches out of complex coding and scripting.

VERDICT **7.9**

HOFA System Basic

Based on the company's modular effects, System Basic (PC/Mac, VST/VST3/AU/AAX/RTAS) is a 'container' plugin that you populate with your choice of 21 bundled effects. Although some of the modules are cut-downs, you get a fairly decent collection: EQ, compression, pan, spatial effects, noise generators, M/S devices and other utility effects. Furthermore, the full version's 300+ presets are also included. Though this probably won't replace your favourite processors in all situations, it's a useful free option when you want custom effects chains in any DAW, in any format, on any computer.

VERDICT **7.4**

Non-Lethal Applications Snapshot

If you have hardware gear in your studio, recall is a huge pain in the backside – you end up taking notes or photos of parameter settings to store them for later. With the Mac-only Snapshot (VST/VST3/AU/AAX), you can upload said photos to your studio machine and attach the pics in the plugin. You can write notes in it, too. It's simple, but it could end up being a lifesaver. An essential download for OS X gear lovers.

VERDICT **9.2**

FM | STUDIO ESSENTIAL!
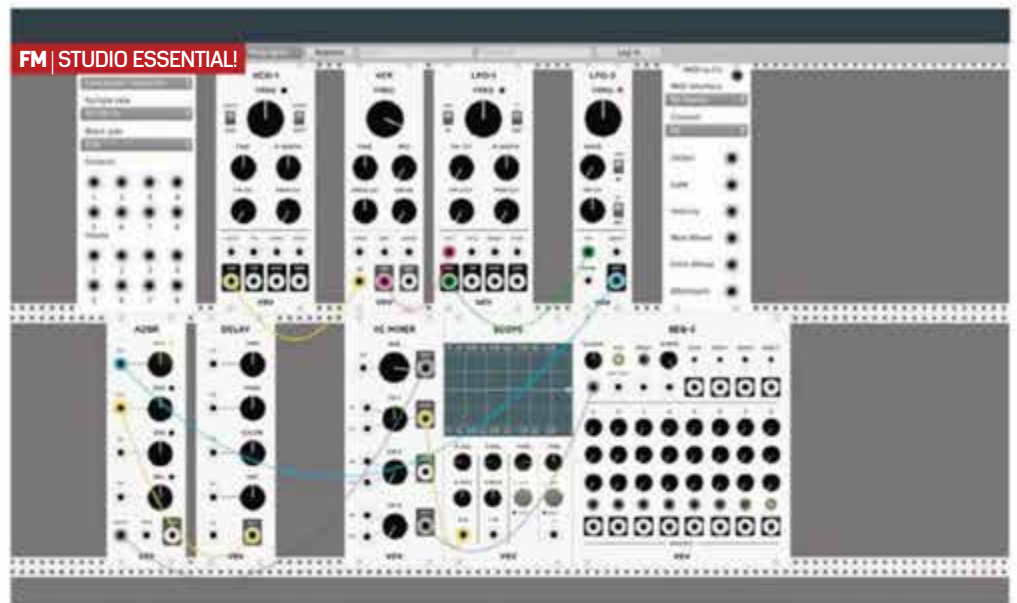
Andrew Belt VCV Rack

Does a free "open-source virtual Eurorack synthesiser" appeal to you? Well, it should! Currently Standalone only (a VST/AU version is planned), VCV Rack opens as a blank three-tier virtual Eurorack case. Right-click in the empty rack, choose modules from the list to add them to the rack, then connect virtual patch cables between them. You get a basic set of modules to begin, and emulations of Mutable Instruments, E340 Cloud Generator VCO and Befaco modules can also be downloaded once you register for free.

In use, VCV Rack is pretty easy to get to grips with, whether you're a Eurorack pro or a modular novice. The interface is clean and smooth, and – most importantly – it sounds great. However, we experienced lags and crashes on our test iMac, which detracted from the experience quite a bit. If these issues can be solved with future updates, then we've likely got a future freeware classic on our hands.

github.com/AndrewBelt

VERDICT **8.4**

Roli Lightpad Block M £190

The second generation of Roli's entry-level Lightpad Block brings hardware tweaks and more software. **Si Truss** investigates

CONTACT **WHO:** Roli **WEB:** http://roli.com
KEY FEATURES Multidimensional Polyphonic Expression (MPE) controller. Featuring soft silicone surface with 225 'microkeywaves'. Connects to desktop or mobile devices via Bluetooth or USB.
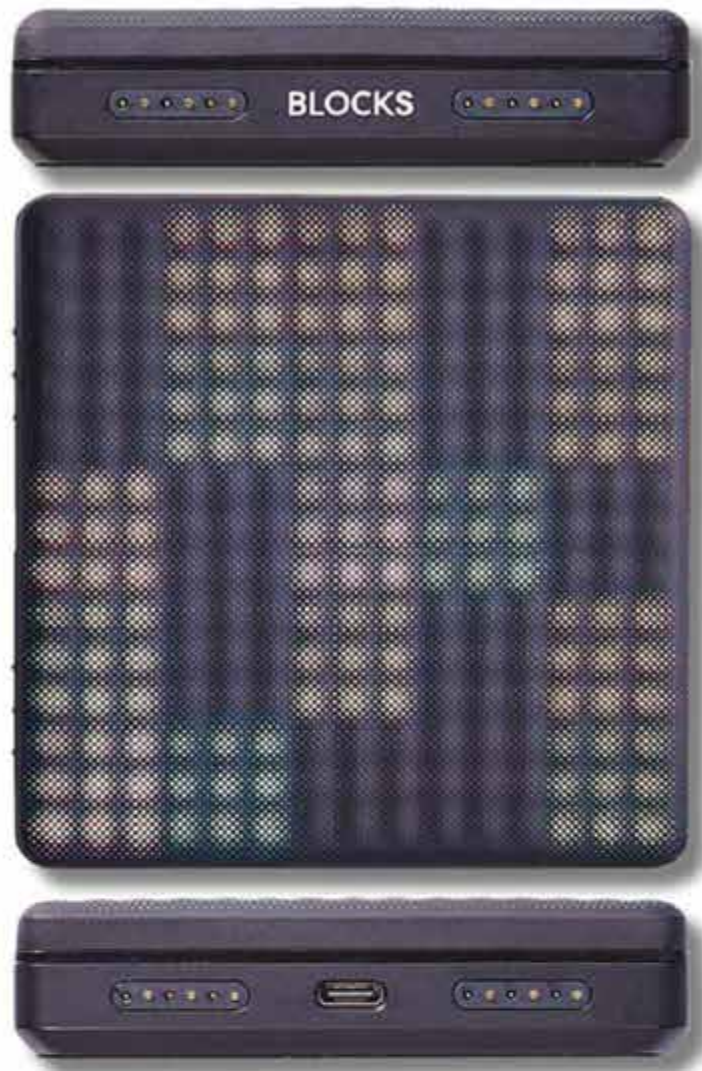
Roli's Blocks range got off to a shaky start. When we reviewed the entry-level multidimensional polyphonic expression (MPE) controllers earlier this year, we found the concept promising but the execution poor. At the time the ecosystem suffered from being bound to Noise, a severely limited iOS app that provided some solid sounds but little in the way of serious music-making functionality.

Now Roli have released Lightpad Block M, the second version of Blocks' control pad. The M, like its predecessor, is a roughly 4-inch square rubberised surface used to send MIDI messages to a desktop or mobile device via Bluetooth. It also has a USB connection, used for charging or hooking up to non-Bluetooth computers. Magnetic connectors along each side allow it to connect to other Blocks, such as the Seaboard Block keyboard or Noise-focused Live and Loop Blocks.

The main update the M boasts is an enhanced playing surface. The original Lightpad featured a flat and fairly firm surface, but the M has a ridged and far softer playing interface, based on the wave-like surfaces on the Seaboard controllers. Under this softer surface lie 225 'microkeywave' sensors, making the M more sensitive to movement and pressure across its five 'dimensions' of expression (Strike, Slide, Glide, Press and Lift). While the original Lightpad was by no means a bad control surface, the M's softer silicon definitely feels more responsive, and makes it far easier to apply subtle changes in pressure. The back lighting is brighter too, making the Lightpad more visually striking.

More than the hardware, however, it's changes to the software that has improved the Blocks experience. Problems with the Noise mobile app persist. It has plenty of quality sounds but, despite a few enhancements since our last review, it remains fairly under-equipped on the functionality front. However, Noise is no longer the be-all and end-all when it comes to creative uses for the Lightpad.

Within the mobile realm, Noise can now be used as an AU within GarageBand for iOS, functioning as a plugin sound engine. It can also export recorded loops as Ableton Live projects. On the desktop front, each Block now comes with a variety of software tools, foremost of which are 'player' versions of Roli's Equator and FXpansion Strobe 2. While these are cut-down versions of full plugins, both offer a healthy selection of MPE-ready sounds with simple parameter editing and FX control, and there's more than enough plug-and-play, MPE-ready content to make the Lightpad a justifiable purchase. Both can be updated to full versions for the reasonable price of £49 each.

There's Blocks Dashboard too, which allows the MIDI output of the controller to be customised and configured to work with third-party devices. Add to that a full DAW included in the box, in the form of Tracktion Waveform, along with a Lite version of Ableton Live, and the Blocks package is a far more rounded proposition than before.

The Lightpad M now feels like a well-thought-out entry point into the world of multidimensional controllers. There are still weak points to Blocks as a whole – mostly Noise, and I'm not convinced the Live and Loops Blocks are worth bothering with – but with a better interface and solid software included, the Lightpad now feels like a desirable purchase. **FM**

THE PROS & CONS

+

Improved playing surface feels great

Now comes with a healthy selection of MPE-ready desktop tools

Looks more visually striking

−

Noise app itself remains fairly weak

Ableton Push 2
£599

QUICK SPEC: Includes Live Intro. I/O: USB, power, 2x pedal inputs

www.ableton.com

NI Maschine Mk3
£479

QUICK SPEC: Includes Maschine software, Komplete 11 Select. I/O: 2x audio in, 2x audio out, headphone out, mic in, MIDI in/out, 1x pedal input, USB power

www.native-instruments.com

Push vs Maschine

Ableton and NI's pad-laden offerings are the two biggest contenders for the 'king of controllers' crown. We put them head-to-head...

While there are other 'hybrid' controller-software systems out there, NI's Maschine and Ableton's Push remain the titans of the software-specific control market. Since the arrival of the Mk3 version of NI's core Maschine controller, the pair of devices are now closer than ever in terms of hardware features, functionality and even looks.

Hardware

Both Push 2 and Maschine Mk3 have similar desktop footprints. Push is around two inches wider, so is the larger of the two overall. Build quality is similarly high on both controllers too. Design-wise, since Maschine got its sleek new look, there's very little to separate the two controllers beyond minor matters of personal taste. Both feature quality, full colour screens, albeit of slightly different shapes. Push's long, thin screen is at its best when used to slice and tweak samples in Simpler, allowing the full audio waveform to be displayed across the length of the screen. Maschine's taller screens, meanwhile, allow for longer virtual mixer faders.

Pads

Both Push and Maschine deliver quality pads that feel great and are plenty responsive, with both also offering punchy, customisable backlighting. The main difference between the two is the amount and size of the pads; Push's are smaller, but there are four times as many as on Maschine Mk3. As a result, Maschine is the better for finger drumming and MPC-style pad jamming. However, the extra pads on Push give it considerably more range when step sequencing or playing melodic parts. Both controllers are very capable in the pad department, although hip-hop heads and those raised on the classic MPC workflow will likely gravitate towards Maschine.

Ins and Outs

Maschine Mk3 and Push 2 feature optional power supplies, meaning that both can run solely on USB power, but you'll need to plug into the mains to get full brightness from the screens and pads. The drop in brightness is more significant with Push than Maschine, to the point that you'll likely find yourself wanting to plug Push in whenever possible. Maschine has a built-in audio interface too. It's a fairly basic 2-in, 2-out affair and unlikely to replace your current studio interface, but its inclusion makes Maschine Mk3 far more self-contained. The same goes for MIDI I/O, which is present on Maschine but not Push 2.

Workflow

Both offer exceptionality tight control over much of their associated software. Beat making, sampling and creative endeavours are served best, but both offer decent mixing and some arrangement control. Ultimately, any argument over depth comes down to the software end. Here, although Maschine has grown into an exceptionally deep production environment, Live ultimately wins out through the sheer fact of being a full DAW including audio recording and editing (although these areas aren't particularly well covered by Push.)

Value

Maschine has a RRP £100 lower than Push. It also includes the full Maschine application, plus Komplete Select, which includes Massive, Monark, some solid effects and a decent crop of Kontakt instruments. Push ships with Live Intro, but realistically you'll need to upgrade to at least Standard, if not Suite, to get the most out of it. As a result, you'll need to shell out considerably more for the full Live/Push experience, even factoring in the need to buy a basic DAW to host Maschine.

FM VERDICT

For value and flexibility… With a healthy dose of included software and onboard I/O, Maschine Mk3 is good value and self-contained.

For depth… Live 9 is one of the best DAWs out there and 10 looks even better. You won't find better Live control than that offered by Push.

Polyend Perc Pro
£1099

Acoustic drum triggering via MIDI sounds too good to be true. **Simon Arblaster** finds out if it's bad news for drummers.

CONTACT WHO: Polyend **WEB:** http://polyend.com
KEY FEATURES I/O: 1x MIDI DIN in, 1x MIDI USB in, 3x Drum Gate in, 3x CV Velocity in, 1x MIDI DIN thru, 1x MIDI DIN out, 3x PERC Ball out

FutureMusic
Platinum Award

Perc Pro from Polyend is designed to turn any surface into a MIDI-controlled drum machine. The package consists of three machined-aluminium driver modules, three multi-position clamps, a footswitch controller, cables and flightcase. Each module, or 'Perc ball', houses a motor that drives a small beater (wooden in this case, but silicon and aluminium variations are optional extras), that delivers a highly accurate, velocity-sensitive strike, controlled via MIDI. The included pedal controller acts as the 'hub' for connection things together. On the rear you have MIDI In, Out and Thru (5-pin DIN), a MIDI USB port, a power socket, and ports for the three Perc balls. On top of the unit are three non-latching footswitches, three Drum Gate inputs and three CV Velocity inputs.

Setup is mostly painless. As the travel of the beater is around half an inch, placement over the striking surface is key, and achieved with the supplied clamps. These offer a high degree of movement and positioning. Thankfully, fiddling with the clamps is the trickiest part – Perc Pro is plug and play, so once you've connected up all the cables and positioned the Perc balls, it's a case of selecting your MIDI channel in your DAW or hardware sequencer, then holding the footswitch of the corresponding Perc ball for a couple of seconds. The unit has now learnt the channel and you're away, nice and easy.

In a strict 'drumming' environment, the Perc balls are at their best when hitting snares, toms, hats, rides and small percussion (tambourines, blocks, cowbells and so on). They can't quite achieve the force needed to strike a kick drum or crash cymbals effectively. However, it is not impossible. We found that a well-tuned kick drum can be struck with enough force in isolation to be useful, while reducing the velocity on the hi-hat and snare, for instance, allows the kick to be far more audible. In fact we found ourselves having to roll back on the hi-hats quite a lot in the velocity department, and there was a fair amount of adjustment to find the sweet spot.

While triggering acoustic drums from within your DAW via MIDI may seem like a niche idea, once it's been made a reality, the mind opens up to all manner of possibilities: recording entire stems of isolated drum tracks, creating drum samples or adding a few extra pairs of hands to your playing, and the drumkit is just the beginning. Any kind of surface can be used to create a more esoteric acoustic drum machine.

Polyend has hit on a perfect combination of labour-saving device and mind-opening creative tool. It's one of those products that you didn't think you needed until you saw it for the first time. It does come at quite a cost, however, and therein lies the problem. It's very easy to say that if you can afford one, go buy it, because it will bring you endless joy. It's a product that you will know whether you want or not straight away. It fulfills such a specific need and is the only product of its type available right now, that if you can't afford one, our advice is "Save, save, save". Perc Pro will enhance your playing, unlock your creativity, and bring another dimension to your productions – it's that simple. **FM**

FM VERDICT

9.0

Perc Pro is straightforward to set up, can handle most 'human' drumming tasks, and also delivers a hefty dose of creativity to your music-making life

Sontronics Solo

£99

The hegemony of the SM58 on stage takes another hit from Sontronics. **Robbie Stamp** weighs up this latest challenger

CONTACT **WHO:** Sontronics **TEL:** +44 (0) 1202 236862 **WEB:** sontronics.com
KEY FEATURES **POLAR PATTERN:** supercardioid **FREQUENCY RESPONSE:** 50Hz-15kHz, Sensitivity: -50dB ±2dB, Impedance: ≤600 **DIMENSIONS:** 190 x 47 x 47mm **WEIGHT:** 792g
ACCESSORIES: mic clip, thread adaptor, zip-up pouch **WARRANTY:** lifetime

The Solo is an instantly gratifying mic which requires no immediate EQ

Sontronics' Solo takes the successful recipe of the STC-80 hand-held dynamic mic and gives it a twist and a tighten with a supercardioid polar pattern. A narrower pickup pattern improves off-axis rejection, reducing spill and increasing source focus, but this can be a trade-off with on-axis frequency response. Before checking how well Sontronics have balanced this equation, let's get physical.

The Solo is a well-weighted, solid microphone; light hand-held mics suck. The grille has a flat front which I much prefer to the bulbous type: it not only gives a more consistent distance guide when up close, it is also less likely to knock your front teeth out in a rowdy club gig.

The output impedance is higher than the average dynamic mic, and this is reflected in the healthy level at the preamp. This bodes well for controlling noise and feedback in live event gain staging, as well as studio usage. A beefy output is useless if the sound doesn't pull its weight, which in this case it does. The Solo is an instantly gratifying mic which requires no (immediate) EQ. The low-end is full and rich when you're up close, with the high-end present and clear without harshness in the sibilant range. This does not mean a scooped mid-range, but one that will take its space in a mix with little additional work (source allowing). I can't

imagine wanting to boost the upper range, which in the live setting is a bonus considering the paucity of many venue mixing desk EQ circuits, which seem to jump between 'dull' and 'searing feedback'.

Supercardioid designs can get a tad peaky due to the phase issues inherent in non-omnidirectional polar patterns, but this deficiency does not appear to trouble the Solo. Off-axis rejection is excellent, allowing the vocalist to dominate, but there's still plenty of on-axis range to allow the mic to be worked ('mic technique'). Whether up close or at a respectful distance, the Solo takes plosives well, and what does get through is more pop than thud. There is little handling noise and, again, what there is is kept well out of the low-end. It's these things, coupled with a good sound that separate the wheat from the chaff in the world of hand-held mics.

Aside from vocals, the Solo works well on guitar amps, especially clean sounds where the crisp top-end works well capturing the defining transients. As an acoustic guitar mic it can provide a full sound without getting

bogged down in boxiness or dulling the percussive and harmonic detail. I didn't get to try it on drums, but knowing the mics I tried it up against I can tell it will work well, especially on snare where the supercardioid pattern will reduce hi-hat spill.

I am attached to my old SM58s, but they are no match for the Solo, which is not that much more expensive. Sontronics have put together a great hand-held vocal mic that will find a role even when there are no vocals to amplify/record. **FM**

FM VERDICT

9.0

For live vocals the Solo is a no-brainer, especially at this price, but it will easily find a home in the studio and on non-vocal sources.

UVI Vintage Vault 2 - The Ultimate Vintage Synth Collection €599

Last month we looked at UVI's OB Legacy. This time its the turn of the Vintage Vault 2, of which the aforementioned OB instrument collection is a part. VV2 is a huge sample-based uber-collection of synthesizers and drum machines built from UVI's existing instrument catalogue. As the title suggests, the focus is very much on old-school kit, though this does take in digital and analogue flavours, and over many decades.

UVI's approach is to sample a core range of sounds from a specific piece of kit, and then build additional functionality on top. So, for example, while you usually get access to factory presets or raw waveforms, these can then be processed through a digital synth engine offering additional functions such as filtering, modulation and effects. Most of the

included instruments do not mention their hardware forebear by name - instead opting for the 'inspired by' moniker – though each one's GUI doffs its cap quite clearly to the original's design aesthetic. While this helps differentiate each of them, the underlying editing scope of many of the instruments is similar – albeit with the controls in different places, and presented in a different way (to fit with the chosen look). This does mean that there is a certain amount of readjustment required to achieve the same thing when moving between instruments (adding some envelope controlled filtering, for example).

UVI Workstation, which functions in both standalone and plugin modes, hosts the instruments, and facilitates layering and multitimbral operation. For those wanting to delve deeper, the whole collection

is also compatible with UVI's Falcon software instrument.

New additions since Vintage Vault 1 cover an interesting range of gear – from the Phase Distortion timbres of the Casio CZ series (in the three instruments of the Cameo collection), to the rare tones of the Moog Apollo. You'll also find a second tranche of 1990s classics in Digital Sensations Vol.2, the sound of a 48-voice 1970s Japanese analogue in UVS-3200 alongside the UVX80 and Beatbox Anthology 2, both of which we looked at in FM a few months back. Of course, you also get everything that came with the first iteration of VV, which in itself is a pretty impressive collection.

Bought separately, all the elements in Vintage Vault 2 will set you back about 2200 Euros (£2000), so the full asking price of 599 Euros

is a massive saving (though still a not inconsiderable sum), and users of VV1 can upgrade too VV2 for 299 Euros. Alternatively, If money was of no consequence you could purchase all the units on which this collection is based – well either that or a decent family house.

The total here comes to 116GB, covering 51 instruments and 111 drum machines, and whilst sampling can't capture all the nuances of the original instruments, the range of flavours available here is impressive. Whether you're an avid retro-synth geek without the pockets to match, or just need to expand your tonal palette, Vintage Vault could keep you occupied for a long time to come.

Bruce Aisher
www.uvi.net

VERDICT 9.2

DrumDrops – 60s Motown Kit | £25.56
www.loopmasters.com

That Motown sound had everything to do with the drums. The magic of the genre came from an expert mix of tight playing, painstakingly selected kit, and some real science when it came to miking the room and capturing each kick and snare.

It's that mix that the DrumDrops team has clearly obsessively studied, and gone out of its way to mimic for this truly epic sample library. The lead-producer-cum-drummer on the project, Timmy Rickard, bunkered down in Miloco's world-class SSL Livingston recording studio with his vintage gear to bring you some proper Motown-inspired drum tracks, made up of full performances and a wealth of individual hits, patches, kits, stems and insanely flexible MIDI files. The Kontakt 5 pack includes some 30,000 separate mic samples alone, making this a must have collection for your samplers… that is, as long as you've got the requisite hard drive space to house it all. *Roy Spencer*

VERDICT 9

Raw Cratez – Hip Hop Kits Volume 1 | £49.95
www.loopmasters.com

The Raw Cratez camp is back with another tip top series, this time focusing on a phat batch of kits, loops and samples aimed squarely at all you hip-hop heads, trippy, jazzy, downtempo beatmakers, and dutiful drum machine players. Mans like Turf Smoke has been busy assembling the maddest combination of punchy kicks, crisp hats, and neck snap snares. Add to that his whole host of dreamy pads, plucked double bass notes and cinematic FX folders, and you have a bounty of beats at your fingertips. It may cost a few quid, but it'll keep you out the record shops and in the studio where you belong. *Roy Spencer*

VERDICT 8

Sample Magic – Soulful Trap | £34.90
www.samplemagic.com

Over this 1.28GB set of rich Rhodes riffs, hybrid drum hits, synthetic vocals and moody melodies, the Sample Magic clique

provide enough ammo to get you well on your way to making some real weighty trap beats. With nearly 900 WAV samples, 174 MIDI files, presets for Massive and Serum, as well as Ableton drum racks and Kontakt kits on offer, you have bags of potential song-starting material to get to grips with. All loops are synced to 80/125 BPM and are key-labeled throughout. In short, this is a fully loaded sample set with a strong emphasis on a warmer, deeper variety of sound design than you normally see in trap packs. *Roy Spencer*

VERDICT 8

Nonstop Sounds – NONSTOP by Pirupa | £24.00
http://sounds.beatport.com

The NONSTOP label burst onto the scene in 2015, and since then they've been laser focused on bringing DJs and producers all the shades underground dance music has to offer. Label founder Piero Pirupa keeps that ethos going as he takes us through the type of techno and house he and his cohorts do so well. Inside the folders you get 820MB of royalty-free loops and hits in WAV and AIFF formats for use in your DAW of choice. From the heavyweight

basslines and synths, jackin' drum loops and tops, to the soaring vocals and searing FX, you get a taste of that NONSTOP sound. A super usable collection from a unique label on the rise. *Roy Spencer*

VERDICT 8

Catalyst Samples – Autumn Deep House | £16.00
http://sounds.beatport.com

When the leaves wither and fall, and everyone starts shivering across clublands' smoking terraces, we have arrived at autumn. Catalyst Samples want to bring a bit of that seasonal character into your DAWs. There's no crackling fire SFX, or swooshing sparkler sounds, but there's more than enough top-drawer house loops and hits to warm your cockles in this song kit-based set. The five tracks on offer are finely polished and expertly arranged; you can marvel at their construction for inspiration, or pick away at the components. The claps and snaps are a delight, and the bass riffs (WAV and MIDI) are just itching to be pulled out and messed with. Don some fingerless gloves and get involved! *Roy Spencer*

VERDICT 8

Can you export Nord sounds?

> Many users have requested the ability to download sounds from their Nord Stage, Electro or Lead directly onto USB stick so that they can be loaded into a hired 'board abroad without needing a laptop. Currently this is still not possible (it would make touring life a lot easier) but hopefully it might happen one day!

Which DAW has the best built-in instruments and effects?

> Producers focus so much on third-party plugins that it's easy to forget that most DAWs come with plenty of instruments and effects built into them. In fact, if you chose never to look beyond the content that came with your DAW, you'd probably still be able to produce release-quality music. Truth be told, there's an argument for saying that you should rinse all you can out of these tools before you even think about investing anywhere else.

Choosing a 'best' DAW based on the content it comes with is problematic, though. For one thing, everyone has different tastes, and there's no point having a load of stuff that sounds great if the workflow of the DAW itself isn't to your liking.

In terms of value, though, it's hard to look beyond Apple's Logic Studio. For less than £200, you get an almost obscene amount of content, though some of it has been around for many a long year, and you need a Mac if you want to run it. Other DAWs come in different configurations that enable you to tailor how much content you get.

FL Studio, for example, enables you to avoid paying for a load of stuff that you'll never use.

One slight anomaly is Propellerhead's Reason. This is now expandable with Rack Extensions and VST plugins, but spent many years as a closed shop, so was developed with an eye on giving users everything they need. We're not saying that its built-in devices trump all others, but it's certainly a very well-rounded package – version 10 looks like another nicely-judged update – so if you do want to buy one piece of software and leave it at that, it's definitely worth considering.

Are all cheap audio interfaces the same?

> If you're looking to spend less than £150 on an audio interface, you're faced with an almost bewildering amount of choice. Practically every hi-tech hardware manufacturer has one, and their specs do tend to be pretty similar.

There's a very simple reason for this: if a company is trying to keep the cost of an interface down, it's inevitable that they'll equip it with just the essential features and restrict the number of inputs and outputs, so the scope to do something different to everyone else is pretty limited. Every manufacturer will try to tell you that their model sounds better than the competition, but if everyone is saying the same thing, who do you believe?

Reading reviews is obviously important before making a choice, then - not just in the likes of FM, but also on forums and elsewhere on the internet. Find out what users are saying about the products you're considering: is the interface reliable, does it perform as it's supposed to, and does the company that makes it provide regular updates?

MatrixBrute vs Voyager for bass?

> For super-solid round and refined bass, the Moog Voyager is an absolute monster; still one of the finest ever made! The Matrixbrute, however, is also a killer bass machine with a very different, more raw tone and a vastly different architecture to the Voyager. However, at this price point, it's really essential to try both (or study YouTube demos carefully)!

Software for DDP/ ISRC encoding?

> If you're looking to master CDs yourself, or send off a master for duplication, you'll need software capable of embedding all the correct metadata within your master file. Disc Description Protocol allows embedding of all the correct data, and ISRC codes helps track sales and royalties. Software wise, 'CD Burn and DDP' by Hofa plugins will do everything you need, and costs 99.90 euros for the full version.

Rhodes sounds on the Nord Stage

How can I get that get a really punchy Herbie Hancock-esque Rhodes sound?

Herbie's Rhodes tone is pretty much the holy grail for jazz/funk players and obviously the major part of the sound is Herbie himself. Herbie's prefered Rhodes was a Suitcase 88 and he had his pianos modified so that the main 'traffic' area (basically the mid to highs of his Rhodes) had harder rubber hammer tips for more punch and clarity. The suitcase amp was a transistor model, so try using the JC (Jazz Chorus) amp emulation on your Nord Stage. Also choose a Rhodes model/sample that has plenty of punch from the off.

> Pick a Rhodes model/sample from the Electric Piano section. If you dont find one that suits, go to nordkeyboards.com and try some different models. The EP7 (tines amped), EP4 (MkV) or EP5 bright tines are great starting points for Rhodes patches.

> Make sure the EQ/amp section is set to Piano so that the piano section routes through the amp simulations/EQ. You can add drive without an amp selected, or alternatively, try out the various amps to see which gets closest to the sound in your head.

> Using the EQ, try boosting the highs to taste while adding some boost around 1.5kHz. This should get you more in the ballpark of Herbie's sound while adding clarity and bite. Remember not to add too much brightness as Herbie's sound is quite dark in the tops.

> Add some global compression to even out the sound and bring through the punch. Add more/less drive to taste, then dial in some tape delay to simulate Herbie's Echoplex tape delay effect. For softer background work, play softly and use the auto-pan in stereo.

Also think carefully about your I/O requirements. It might be tempting to buy the model that has the most inputs and outputs, but you're probably better off having two decent channels than four low-quality ones. MIDI I/O may also be useful. Many interfaces ship with DAWs and plugins so if you're starting from scratch, getting them thrown in could be a real bonus.

Is the iPhone X the best one for music making?

> In terms of power and outright desirability, the iPhone X certainly has the edge over the rest of the handsets in Apple's range. However, you certainly don't need to have it if you want to make music on iOS – pretty much all the other iPhones currently on sale will enable you to do that perfectly well – so it's hardly an essential purchase.

If you want to upgrade your mobile and have £1,000 burning a hole in your pocket, the iPhone X will undoubtedly be tempting, but the bottom line is that an iPad, with its larger screen size, will give you a better music making experience, and can be had for considerably less.

Mini-analogues with presets

> A couple of current boards come to mind here. Roland's JD-Xi has a decent mono analogue section which allows you to save banks of 'favourites' and access them directly from the front panel with a single button press. Korg's Minilogue allows 8 'favourites' for direct recall. Simply hold shift and press one of the 8 Voice Mode buttons to recall.

Got questions that need answering?

Send us your Qs via Twitter **@futuremusicmag** or **facebook. com/futuremusicmagazine** and we'll endeavour to solve them!

HIGH-END SYNTHS

NEW ENTRY

DSI Prophet Rev2

£1,914

Full Review: FM325

A brilliant synth with lots of hands-on control and a well-defined, powerful, upfront sound. The Rev2 builds on the Prophet 08 and makes significant improvements to boot!

Arturia MatrixBrute

£1,619

Full Review: FM315

There's very little not to love about the MatrixBrute. It oozes personality and can wear a lot of hats, from a warm, sweet monosynth to dirty ambient chord machine. Mind blown!

Dave Smith Instruments Pro 2 | $1,819
Review FM284 A ridiculously versatile mono/paraphonic synth that anyone can happily get lost in. Without doubt a great investment.

Sequential Prophet-6 | £2,549
Review FM297 The Sequential name returns, and the Prophet-6 more than lives up to its heritage. Another future classic from Dave Smith.

Elektron Analog Keys | £1,099
Review FM278 A system capable of great results, though perhaps held back by some ease-of-use issues. It's built like a tank though.

Roland System-8 | £1,299
Review FM317 Covers a vast sonic territory with superb flexibility – from vintage Roland tones to futuristic sounds, it truly delivers. The Juno and Jupiter plug-outs impress too.

Moog Sub 37 | $1,579
Review FM286 With a richer set of features and fewer operational hurdles than its predecessor, the Sub 37 is a superb and highly desirable upgrade to the Phatty family of Moog synths.

Roland JD-XA | £1,499
Review FM295 Greater than the sum of its parts. It can be a great analogue and a great digital synth, but combine the two and some real magic happens.

Behringer DeepMind 12 | £999
Review FM316 The DeepMind won't undermine the market for characterful analogue polysynths, but it is flexible. It isn't cheap, but it has plenty going on and a sound of its own.

Novation Peak | £1,249
Review FM321 Peak is versatile and largely intuitive, with a unique sound that excels at dark, trippy, grainy electronica and FX.

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AUDIO INTERFACES

UAD Apollo Twin MkII | from $699

Full Review: FM317

UA's desktop interface has been refined across the board for better sound and lower latency. There's now a Quad DSP version too.

Arturia AudioFuse | £519

Full Review: FM321

A nicely designed, highly configurable interface ready to have almost any sound source thrown at it. Its price is the only potential downside

Apogee Element 46 | £859

Review FM318 If you're happy with your studio interface being controlled via software, Apogee's Element range offers great quality and features.

Audient iD4 | £120

Review FM312 This compact interface delivers audio quality and stripped-back functionality for a thoroughly reasonable price. A great budget interface.

Roland Super UA | £409

Review FM314 Super UA does everything you'd expect and more, and can easily hold its own alongside similar compact high-end interfaces.

Focusrite Scarlett 18i8 | £290

Review FM311 The second generation benefits from increased preamp performance, extended sample rate compatibility and a better overall sound. A quality package.

Antelope Orion Studio | £2,345

Review FM304 A comprehensive multi-channel interface with 12 quality mic pres, onboard DSP and very flexible I/O options.

Focusrite Clarett 4Pre | £500

Review FM304 The whole Clarett range is excellent, and this punches well above its weight in audio quality, functionality and ease-of-use.

M-Audio M-Track 2x2M | £100

Review FM312 As budget audio interfaces go, it's hard to go wrong with M-Audio's MIDI-equipped 2-in 2-out box..

Antelope Audio Zen Tour | £1274

Review FM310 A high-quality compact interface for studio, rehearsals and gigs, with excellent built-in DSP processing.

AFFORDABLE SYNTHS

Roland Boutique SE-02 | £509

Full Review: FM322

A great-sounding, portable and versatile monosynth that's great for both the studio and the stage. It may be small, but it certainly packs a huge punch for a modest outlay.

Novation Circuit Mono Station £479

Full Review: FM320

The combination of a solid analogue sound engine, a uniquely powerful sequencer and a competitive price point make the Circuit Mono Station a must-try synth.

Novation Circuit | £250

Review FM299 A broad range of sounds with a fluid and intuitive workflow all adds up to make Circuit a winner. Its sequencer is absolutely killer too.

Korg Minilogue | £435

Review FM302 Four-voice polyphony, killer sound, flexible features and great build quality. We're not sure how Korg pulled this off for the price, but they've nailed it. An essential buy!

Moog Mother-32 | £499

Review FM302 It can be a standalone synth, or you can plug it into any number of gadgets to create a modular monster. With a Mother-32 under your arm, the world is your oyster!

Waldorf Pulse 2 | £406

Review FM273 Being a sound module without a keyboard, it's not quite a 'go anywhere' synth. But for our money this is the most power you'll find in a small package for the price.

Pioneer DJ Toriaz AS-1 | £479

Review FM319 With its gorgeous DSI-powered sound, sequencer and arp, and its performance-friendly design, the AS-1 has all the makings of a future cult classic.

Arturia MicroBrute | £230

Review FM273 The MicroBrute certainly lives up to its name – it's a fantastically gritty monosynth that's easily compact enough to bundle in your rucksack along with a laptop.

Korg Monologue | £299

Review FM312 Cheap and cheerful, but a powerful piece of kit, and with a surprising amount of flexibility given its limited envelope section.

Korg Volca FM | £129

Review FM305 A great-sounding box of classic FM sounds. It might lack the polyphony of the DX7 but, apart from that, the sound is bang on. Its motion sequencing is seriously powerful too.
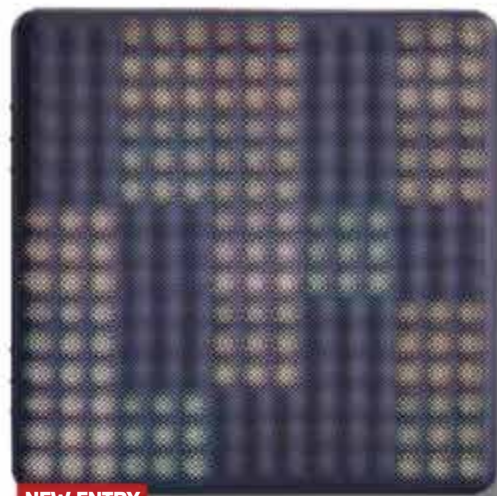
HYBRID CONTROLLERS

NI Maschine MK3

£479

Full Review: FM324

A few minor bugbears aside, this is probably the finest hybrid hardware/software music-making platform on the market right now.

NEW ENTRY

Roli Lightpad Block M | £190

Full Review: FM325

Thanks to refined hardware and vastly improved software implementation, the Lightpad is now a desirable, expressive controller.

NI Komplete Kontrol S61 | £539

Review FM285 A beautiful hardware and software package that just works. Now works with third-party plugins too.

Akai Advance 49 | £399

Review FM293 Combined with Akai's VIP software, the Advance controllers remove the disconnect between controller and DAW.

NI Maschine Jam | £299

Review FM310 Jam is a great, creative controller in its own right, but it's best used as a counterpoint to the existing Maschine hardware.

Arturia KeyLab 88 | £659

Review FM301 A top keyboard controller, and the addition of all those sounds makes it one of the best synths on the market too.

Ableton Push 2 | £599

Review FM302 Push and Live were already a great combo, but version 9.5 and Push 2 raise the bar for one of the best hardware/software experiences around.

Arturia MiniLab MkII | £89

Review: FM316 The Mk2 is only a subtle step on from the Mk1 hardware-wise but it's a solid little controller, and worth the price for the included content alone.

Novation Launchpad Pro | £249

Review FM296 The Launchpad Pro's Live control isn't quite as extensive as Ableton's Push, but it's more compact and works standalone too. Easily one of the best controllers around.

Akai MPC Touch | £479

Review FM301 The addition of a touchscreen narrows the gap between software and hardware, bringing an all-round more tactile and integrated creative experience.

DRUM SYNTHS

Arturia DrumBrute | £379

Full Review: FM312

A characterful and flexible analogue drum machine with some uniquely creative sequencing tricks up its sleeve – at a winning price.

Korg Volca Kick | £139

Review FM316 The Volca Kick is capable of beefy drum and bass sounds that belie its compact form factor. A must-try for club-focused producers.

Elektron Analog Rytm | £1,140

Review FM282 The Rytm sounds massive and is very flexible. It's inspiring and addictive, and the sequencer is hugely versatile.

DSI/Roger Linn Tempest | £1,819

Review FM248 Doubtlessly lives up to the heritage of the two names behind it – certainly destined to be a future classic.

Teenage Engineering PO-32 Tonic | £89

The palm-sized drum synth is a lot of fun, and compatibility with Sonic Charge's Microtonic synth makes it surprisingly flexible.

WORKSTATIONS & PIANOS

NEW ENTRY

Korg Grandstage

£2,349

Full Review: FM325

A classy sounding (and looking) stage piano offering a range of superb Kronos sounds, with intuitive operation and solid build.

Vox Continental | £1,769

Review FM324 Delivers great-sounds with solid build and portability, but falls short in features and affordability compared to the competition.

Nord Stage 3 | £3,499

The Nord Stage 2 was already a highly regarded board, version 3 adds a synth engine and expanded range of sounds.

Korg Kronos | £3,329

Review FM320 A subtle evolution, but one that keeps Kronos firmly at the top of the diminishing workstation pile. Uniquely powerful on stage or in the studio, it's a great investment.

Yamaha MX88 | £999

Review FM319 A solid and versatile machine. It's reasonably priced, well-built, portable and sounds good, making it great board for beginners and pro's alike.

HARDWARE SAMPLERS

Akai Professional MPC X £1,859

Full Review: FM323

MPC X is hugely powerful. It works impressively standalone and as a controller, and it's on the way to replacing your DAW, live or in the studio

Elektron Octatrack | €1,240
Review FM244 Elektron's reimagining of hardware sampling results in a unique approach to sample-based composition and performance.

Elektron Digitakt | £659
Review FM320 With deep sequencing and a powerful sound engine, Digitakt is the 'affordable' Elektron groovebox we've been dreaming of.

Korg Electribe Sampler | £329
Review FM295 Not the perfect sampling solution, but fun to use and a creative alternative to the ever-present DAW. It's great for live use too.

Pioneer DJ Toraiz SP-16 Sampler | £1,279
Review FM310 The SP-16 was impressive at launch but has got better through subsequent firmware updates – there's a lot to like here.

CV CONTROLLERS

NEW ENTRY

Polyend Seq & Poly £1,099 + £399

Full Review: FM325

Polyend's mammoth MIDI sequencer and CV convertor make a formidable, powerful pair, but they don't come cheap!

Arturia BeatStep Pro | £185
Review FM296 Arturia's sequencer bridges the gap between MIDI and CV, and is easily the most versatile device you'll find at this price.

Korg SQ-1 | £106
Review FM290 Korg's compact sequencer is one of the most budget-friendly CV tools out there, but it's still got a decent amount of flexibility.

Koma Elektronik Komplex | £1,299
Review: FM304 Komplex by name, complex by nature. Koma's sequencing beast is a real quality bit of kit that offers a ton of flexibility.

Expressive E Touché | €399
Review: FM322 Both addictive and inspiring to use, and adds a new dimension of expressive control to both software and hardware devices

TIME TO STEP OFF THAT TREADMILL

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